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EMPLOYMENT-UNEMPLOYMENT

HEARINGS

BEFORE THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

ONE HUNDREDTH CONGRESS

SECOND SESSION

PART 32

MAY 6, JUNE 3, JULY 8, AND AUGUST 5, 1988

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EMPLOYMENT-UNEMPLOYMENT

FRIDAY, MAY 6, 1988

Congress of the United States,
Joint Economic Committee,
Washington, DC.

The committee met, pursuant to notice, at 9:30 a.m., in room SD-628, Dirksen Senate Office Building, Hon. Paul S. Sarbanes (chairman of the committee) presiding.

Present: Senator Sarbanes.

Also present: Judith Davison, executive director; and William Buechner and Jim Klumpner, professional staff members.

OPENING STATEMENT OF SENATOR SARBANES, CHAIRMAN

Senator **Sarbanes**. The committee will come to order.

We are pleased once again to welcome Janet Norwood, Commissioner of Labor Statistics, and her associates before the committee to testify on the employment and unemployment situation for April.

I also hope to get into the Consumer and Producer Price Indexes figures released in April, which show a substantial increase in the inflation rate. It's only a monthly figure, but nevertheless it represents something of a sharp departure from what we've experienced in the recent past.

Also, Commissioner, we would like to take a look at some of the productivity data which you released at the beginning of the week, as I recall.

With that, we would be happy to hear from you this morning.

STATEMENT OF HON. JANET L. NORWOOD, COMMISSIONER, BUREAU OF LABOR STATISTICS, DEPARTMENT OF LABOR, ACCOMPANIED BY THOMAS J. PLEWES, ASSOCIATE COMMISSIONER, OFFICE OF EMPLOYMENT AND UNEMPLOYMENT STATISTICS; AND KENNETH V. DALTON, ASSOCIATE COMMISSIONER, OFFICE OF PRICES AND LIVING CONDITIONS

Mrs. **Norwood**. Thank you very much. I have, as always, Ken Dalton on my right and Tom Plewes on my left to provide expert help.

It's always a pleasure to be here.

Unemployment continued its downward trend in April, and employment rose. Both the total unemployment rate including the resident armed forces and the civilian worker rate were 5.4 percent. The civilian rate has declined four-tenths of a percentage point over the last 3 months.

The employment trends over the last few months are not quite so clear. The household survey showed an unusually large increase of 600,000 in April, which came on the heels of a 300,000 decline the previous month. The payroll survey, on the other hand, had large employment gains in both February and March and then only a modest gain of 175,000 in April. So far this year, however, the two surveys have registered fairly similar gains—1.2 million in the payroll survey and 1 million in the household survey.

Adult men accounted for most of the decline in unemployment in April; their jobless rate was down three-tenths of a percentage point to 4.6 percent. The rate for women held at 4.8 percent, after dropping in March. There was also a slight improvement in the duration of unemployment, with median duration falling a full week to 5.6 weeks and the number of persons unemployed 15 weeks or longer dropping by 180,000. The number of unemployed job losers declined to slightly less than 3 million, and their proportion of the total jobless was at its lowest point in this decade—44 percent.

Given the erratic movements in the household survey's employment series over the last few months, I would caution against looking at April's data in isolation. The 1 million increase over the first 4 months of 1988 in civilian employment is, I think, a meaningful way to assess this current situation, and this is about the same pace as last year's healthy growth. Employment gains have been particularly strong for adult men so far this year.

Growth in voluntary part-time employment was fairly sharp in April. We often fall into the trap of reacting negatively to any job expansion that is not full time, but some 1 out of every 8 workers—15 million in all—do not want full-time jobs. It is, of course, the involuntary part-time category that continues to concern us. In April, that number stood at 5.2 million.

Although the 175,000 increase in payroll jobs was the smallest since last September, it follows a quarter in which monthly growth averaged a robust 350,000. Even with the relatively small April gain, there were still positive signs. Factory employment was up 45,000, largely in export-related industries. This is a welcome sign, since manufacturing job growth had been sluggish in the first 3 months of this year. Mining employment, which had been essentially flat since that last summer, posted a sharp increase—15,000.

Construction and retail trade in April had quite similar stories. Both of these seasonally influenced industries had maintained larger-than-normal payrolls through the winter off season. Thus, even though retail trade has shown no growth in the last 2 months on a seasonally adjusted basis, and construction in the last month, they have sustained their fairly high employment levels.

Elsewhere, a 10,000 increase in insurance-industry employment paced a 15,000 rise in finance, insurance, and real estate. Wholesale trade also gained 15,000 jobs in April. The services industry, which has grown in fits and starts over the past year, showed a modest 55,000 gain in April, most of it in the health services industry.

In recent months, the drop in the civilian unemployment rate to its lowest levels of this decade has received considerable attention. With April's decline to 5.4 percent, we now have the lowest rate since June 1974. Last month, we discussed the issues of discouragement and involuntary part-time work, comparing our current situation to that of periods of comparable unemployment. I would like to follow up on that discussion.

June 1974 is not a good period for comparison because the 5.4 percent unemployment rate occurred well into a fairly steep recession. May 1979 is a better comparison point. At that time, the economy was, like now, in an economic expansion, and the jobless rate was 5.6 percent. Since unemployment is the most widely quoted of our measures, let's start with that. Compared with May 1979, the jobless rate is higher today for adult men and lower for women. Those figures are certainly consistent with changes in our industrial structure; the male-dominated mining and manufacturing industries have both lost considerable employment over the period. At the same time, many of the service-sector industries that employ large numbers of women have experienced strong job growth. Also, over this period, women have become more and more likely to have a permanent—that is, year round, full time—attachment to their jobs. Thus, they may be experiencing less frictional unemployment than they previously did, and their full-time jobs may be more secure. In addition, women in the labor force are, in general, much better educated than they were in 1979; the number of college-educated women in the labor force has grown by almost two-thirds since 1979, while the number of dropouts has declined. This improvement in educational levels should have had a positive effect on women's jobless rates. For employed women, BLS data show that the gender gap in earnings has narrowed, but there is still a very long way to go.

The teenage jobless rate is the same as it was 9 years ago. That is a bit discouraging, since we might have expected some improvement as their population declined. The current jobless rate for black teenagers of 31 percent, while terribly high, is somewhat below the 38 percent of May 1979. And, unemployment rates for blacks in general remain slightly more than 2½ times those for whites. Finally, in terms of duration, there has been little change in the share of the unemployed who were jobless 15 weeks or longer. And we still have a disturbingly large concentration of people who have been looking for work for more than 6 months—800,000.

While the number of discouraged workers has risen from about 800,000 to about 1 million, the population and labor force are, of course, also larger. Discouraged workers are now about the same proportion of the labor force as they were in 1979. And, as we mentioned last month, a somewhat larger proportion of total employment is in the involuntary part-time category—4.5 percent versus 3.6 percent.

A larger proportion of our working-age population is employed now than ever before, almost entirely because of the rapid rise in women's employment. And, while men's work activity has declined, this mostly reflects earlier retirement, which is generally considered to be a positive development, at least from the workers' point of view.

Overall labor force growth is far slower now than in the late 1970's—less than 2 million a year versus about 3 million. Undoubtedly, such slower growth has caused labor shortages in some areas and in some industries and has helped us to make inroads into unemployment.

To summarize April's employment situation, unemployment continued its recent slow, steady fall, and employment growth, though erratic on a month-to-month basis, seems to be on last year's healthy pace.

We would be glad to try to answer any questions you may have.

[The table attached to Mrs. Norwood's statement, together with the Employment Situation press release, follows:]

Unemployment rates of all civilian workers by alternative seasonal adjustment methods

Month and year	Unadjusted rate	X-11 ARIMA method						X-11 method (official method before 1980)	Range (cols. 2-8)
		Official procedure	Concurrent (as first computed)	Concurrent (revised)	Stable	Total	Residual		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1987									
April.......	6.2	6.3	6.3	6.3	6.4	6.3	6.3	6.3	.1
May.........	6.1	6.3	6.3	6.3	6.3	6.3	6.5	6.3	.2
June........	6.3	6.1	6.1	6.1	6.1	6.1	6.2	6.1	.1
July........	6.1	6.0	6.0	6.1	6.0	6.1	6.1	6.0	.1
August......	5.8	6.0	6.0	6.1	6.0	6.1	6.1	6.0	.1
September...	5.7	5.9	5.9	5.9	6.0	5.9	5.9	5.9	.1
October.....	5.7	6.0	6.0	6.0	6.0	5.9	6.0	6.0	.1
November....	5.6	5.9	5.9	5.9	5.9	5.9	5.9	5.9	-
December....	5.4	5.8	5.8	5.8	5.7	5.7	5.8	5.8	.1
1988									
January.....	6.3	5.8	5.8	5.8	5.8	5.8	5.6	5.8	.2
February....	6.2	5.7	5.7	5.7	5.8	5.7	5.6	5.8	.2
March.......	5.9	5.6	5.6	5.6	5.7	5.6	5.5	5.6	.2
April.......	5.3	5.4	5.5	5.5	5.5	5.4	5.4	5.4	.1

SOURCE: U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
May 1988

(1) Unadjusted rate. Unemployment rate for all civilian workers, not seasonally adjusted.

(2) Official procedure (X-11 ARIMA method). The published seasonally adjusted rate for all civilian workers. Each of the 3 major civilian labor force components--agricultural employment, nonagricultural employment and unemployment--for 4 age-sex groups--males and females, ages 16-19 and 20 years and over--are seasonally adjusted independently using data from January 1974 forward. The data series for each of these 12 components are extended by a year at each end of the original series using ARIMA (Auto-Regressive, Integrated, Moving Average) models chosen specifically for each series. Each extended series is then seasonally adjusted with the X-11 portion of the X-11 ARIMA program. The 4 teenage unemployment and nonagricultural employment components are adjusted with the additive adjustment model, while the other components are adjusted with the multiplicative model. The unemployment rate is computed by summing the 4 seasonally adjusted unemployment components and calculating that total as a percent of the civilian labor force total derived by summing all 12 seasonally adjusted components. All the seasonally adjusted series are revised at the end of each year. Extrapolated factors for January-June are computed at the beginning of each year; extrapolated factors for July-December are computed in the middle of the year after the June data become available. Each set of 6-month factors are published in advance, in the January and July issues, respectively, of Employment and Earnings.

(3) Concurrent (as first computed, X-11 ARIMA method). The official procedure for computation of the rate for all civilian workers using the 12 components is followed except that extrapolated factors are not used at all. Each component is seasonally adjusted with the X-11 ARIMA program each month as the most recent data become available. Rates for each month of the current year are shown as first computed; they are revised only once each year, at the end of the year when data for the full year become available. For example, the rate for January 1984 would be based, during 1984, on the adjustment of data from the period January 1974 through January 1984.

(4) Concurrent (revised, X-11 ARIMA method). The procedure used is identical to (3) above, and the rate for the current month (the last month displayed) will always be the same in the two columns. However, all previous months are subject to revision each month based on the seasonal adjustment of all the components with data through the current month.

(5) Stable (X-11 ARIMA method). Each of the 12 civilian labor force components is extended using ARIMA models as in the official procedure and then run through the X-11 part of the program using the stable option. This option assumes that seasonal patterns are basically constant from year-to-year and computes final seasonal factors as unweighted averages of all the seasonal-irregular components for each month across the entire span of the period adjusted. As in the official procedure, factors are extrapolated in 6-month intervals and the series are revised at the end of each year. The procedure for computation of the rate from the seasonally adjusted components is also identical to the official procedure.

(6) Total (X-11 ARIMA method). This is one alternative aggregation procedure, in which total unemployment and civilian labor force levels are extended with ARIMA models and directly adjusted with multiplicative adjustment models in the X-11 part of the program. The rate is computed by taking seasonally adjusted total unemployment as a percent of seasonally adjusted total civilian labor force. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(7) Residual (X-11 ARIMA method). This is another alternative aggregation method, in which total civilian employment and civilian labor force levels are extended using ARIMA models and then directly adjusted with multiplicative adjustment models. The seasonally adjusted unemployment level is derived by subtracting seasonally adjusted employment from seasonally adjusted labor force. The rate is then computed by taking the derived unemployment level as a percent of the labor force level. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(8) X-11 method (official method before 1980). The method for computation of the official procedure is used except that the series are not extended with ARIMA models and the factors are projected in 12-month intervals. The standard X-11 program is used to perform the seasonal adjustment.

Methods of Adjustment: The X-11 ARIMA method was developed at Statistics Canada by the Seasonal Adjustment and Times Series Staff under the direction of Estela Bee Dagum. The method is described in The X-11 ARIMA Seasonal Adjustment Method, by Estela Bee Dagum, Statistics Canada Catalogue No. 12-564E, February 1980.

The standard X-11 method is described in X-11 Variant of the Census Method II Seasonal Adjustment Program, by Julius Shiskin, Allan Young and John Musgrave (Technical Paper No. 15, Bureau of the Census, 1967).

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MAY 6, 1988

THE EMPLOYMENT SITUATION: APRIL 1988

Employment rose and unemployment declined further in April, the Bureau of Labor Statistics of the U.S. Department of Labor reported today. Both the overall and the civilian worker jobless rates edged down to 5.4 percent.

Nonagricultural payroll employment--as measured by the monthly survey of business establishments--rose by 175,000 in April. Total civilian employment--as estimated through the monthly survey of households--showed an increase of about 600,000, following a decline of about half that amount in the prior month. Over the past 12 months, the employment estimates from the establishment and the household surveys have risen by 3.2 and 2.9 million, respectively.

Unemployment (Household Survey Data)

About 6.6 million persons were unemployed in April, almost 200,000 fewer than in March (after seasonal adjustment). Practically all of the improvement resulted from a decline in the number of unemployed persons who had lost their last jobs. The civilian worker unemployment rate declined by 0.2 percentage point over the month to 5.4 percent. (See tables A-2 and A-8.)

Unemployment resumed its downward trend in late 1987, following several months of little or no change. Since October 1987, the jobless total has fallen by more than half a million and the jobless rate by more than half a percentage point.

Nearly all of the March-to-April decline in unemployment occurred among adult men, as their jobless rate fell three-tenths of a point to 4.6 percent. The jobless rate for adult women, which had declined in March, was unchanged at 4.8 percent, while rates for the other major demographic groups--teenagers (15.9 percent), whites (4.6 percent), blacks (12.2 percent), and Hispanics (9.3 percent)--were little changed. (See tables A-2 and A-3.)

The median duration of unemployment declined by a full week to 5.6 weeks, the lowest level since early 1980. (See table A-7.)

Civilian Employment and the Labor Force (Household Survey Data)

Total civilian employment rose by 610,000 on a seasonally adjusted basis in April to a level of 114.7 million. This followed a decline of 300,00 in March. The percentage of the total civilian population that was working—the employment population ratio—was a record 62.3 percent. (See table A-2.)

Table A. Major indicators of labor market activity, seasonally adjusted

Category	Quarterly averages		Monthly data			Mar.-Apr. change
	1987	1988	1988			
	IV	I	Feb.	Mar.	Apr.	
HOUSEHOLD DATA	Thousands of persons					
Labor force 1/	122,316	122,882	123,084	122,639	123,055	416
Total employment 1/	115,235	115,954	116,145	115,839	116,445	606
Civilian labor force	120,568	121,142	121,348	120,903	121,323	420
Civilian employment	113,486	114,214	114,409	114,103	114,713	610
Unemployment	7,082	6,928	6,938	6,801	6,610	-191
Not in labor force	62,899	62,825	62,621	63,208	62,909	-299
Discouraged workers	910	1,027	N.A.	N.A.	N.A.	N.A.
	Percent of labor force					
Unemployment rates:						
All workers 1/	5.8	5.6	5.6	5.5	5.4	-0.1
All civilian workers	5.9	5.7	5.7	5.6	5.4	-.2
Adult men	5.0	5.0	4.9	4.9	4.6	-.3
Adult women	5.2	5.0	5.2	4.8	4.8	0
Teenagers	16.6	16.0	15.4	16.5	15.9	-.6
White	5.0	4.8	4.8	4.7	4.6	-.1
Black	12.2	12.5	12.6	12.8	12.2	-.6
Hispanic origin	8.5	7.9	8.3	8.2	9.3	1.1
ESTABLISHMENT DATA	Thousands of jobs					
Nonfarm employment	103,293	p104,284	104,365	p104,661	p104,835	p174
Goods-producing	25,164	p25,336	25,354	p25,449	p25,506	p57
Service-producing	78,129	p78,948	79,011	p79,212	p79,329	p117
	Hours of work					
Average weekly hours:						
Total private	34.8	p34.8	34.9	p34.6	p34.9	p0.3
Manufacturing	41.2	p41.1	41.0	p41.0	p41.2	p.2
Overtime	3.9	p3.8	3.7	p3.7	p4.0	p.3

1/ Includes the resident Armed Forces.
p=preliminary.

N.A.=not available.

The civilian labor force also rebounded in April. It rose by 420,000 to 121.3 million, returning to about the February level. As a result, the labor force participation rate rose two-tenths of a percentage point to 65.9 percent. Over the year, the labor force grew by 1.9 million, with adult women comprising about 3 out of every 5 added workers. (See table A-2.)

Industry Payroll Employment (Establishment Survey Data)

Total nonagricultural payroll employment increased by 175,000 in April to a level of 104.8 million, seasonally adjusted. This growth followed gains averaging 350,000 during the first quarter. April's rather modest growth featured renewed strength in both manufacturing and mining. (See table B-1.)

In the goods-producing sector, factory jobs rose by 45,000, mostly in industries which have increased their exports in recent months. Two component industries--fabricated metal products and machinery--accounted for half of the gain. Mining posted an unusually strong pickup of 15,000. Construction employment, which had posted substantial gains in the previous 2 months, was unchanged in April on a seasonally adjusted basis.

In the service-producing sector, the services industry showed a modest employment gain of 55,000, with much of the increase in health services. Wholesale trade continued its pattern of consistent job growth, rising by 15,000 in April, and by 175,000 over the year. Employment in finance, insurance, and real estate also increased, with the insurance component accounting for most of the gain. There was little growth in retail trade, government, and transportation and public utilities.

Weekly Hours (Establishment Survey Data)

The average workweek for production or nonsupervisory workers on private nonagricultural payrolls rose 0.3 hour in April to 34.9 hours, seasonally adjusted. Similarly, the manufacturing workweek increased 0.2 hour to 41.2. Factory overtime rose 0.3 hour to 4.0 hours, matching the historically high level attained last October. These seasonally adjusted increases, however, may overstate the underlying movement, because of technical factors associated with the way the seasonal adjustment process deals with the timing of Easter week. (See table B-2.)

The index of aggregate weekly hours of production or nonsupervisory workers on private nonagricultural payrolls, at 124.3 (1977=100), climbed 1.0 percent in April, after seasonal adjustment. The manufacturing index rose 0.8 percent to 96.1. (See table B-5.)

Hourly and Weekly Earnings (Establishment Survey Data)

Average hourly earnings of private production or nonsupervisory workers increased 0.5 percent in April, seasonally adjusted, while average weekly earnings climbed by 1.4 percent, largely reflecting the increase in the workweek. Prior to seasonal adjustment, average hourly earnings rose by 3 cents to $9.22, and average weekly earnings jumped $3.80 to $320.86. (See table B-3.)

The Hourly Earnings Index (Establishment Survey Data)

The Hourly Earnings Index (HEI) was 177.6 (1977=100) in April, seasonally adjusted, an increase of 0.5 percent from March. For the 12 months ended in April, the increase was 2.9 percent. In dollars of constant purchasing power, the HEI decreased 1.0 percent during the 12-month period ending in March. The HEI excludes the effects of two types of changes unrelated to underlying wage rate movements--fluctuations in manufacturing overtime and interindustry employment shifts. (See table B-4.)

Revisions in the Establishment Survey Data

The Employment Situation news release of data for May will introduce revisions in the establishment-based series on nonagricultural payroll employment, hours, and earnings to reflect the regular annual benchmark adjustments and updated seasonal adjustment factors.

The Employment Situation for May 1988 will be released on Friday, June 3, at 8:30 A.M. (EDT).

Explanatory Note

This news release presents statistics from two major surveys, the Current Population Survey (household survey) and the Current Employment Statistics Survey (establishment survey). The household survey provides the information on the labor force, total employment, and unemployment that appears in the A tables, marked HOUSEHOLD DATA. It is a sample survey of about 55,800 households that is conducted by the Bureau of the Census with most of the findings analyzed and published by the Bureau of Labor Statistics (BLS).

The establishment survey provides the information on the employment, hours, and earnings of workers on nonagricultural payrolls that appears in the B tables, marked ESTABLISHMENT DATA. This information is collected from payroll records by BLS in cooperation with State agencies. The sample includes over 290,000 establishments employing over 38 million people.

For both surveys, the data for a given month are actually collected for and relate to a particular week. In the household survey, unless otherwise indicated, it is the calendar week that contains the 12th day of the month, which is called the survey week. In the establishment survey, the reference week is the pay period including the 12th, which may or may not correspond directly to the calendar week.

The data in this release are affected by a number of technical factors, including definitions, survey differences, seasonal adjustments, and the inevitable variance in results between a survey of a sample and a census of the entire population. Each of these factors is explained below.

Coverage, definitions, and differences between surveys

The sample households in the household survey are selected so as to reflect the entire civilian noninstitutional population 16 years of age and older. Each person in a household is classified as employed, unemployed, or not in the labor force. Those who hold more than one job are classified according to the job at which they worked the most hours.

People are classified as *employed* if they did any work at all as paid civilians; worked in their own business or profession or on their own farm; or worked 15 hours or more in an enterprise operated by a member of their family, whether they were paid or not. People are also counted as employed if they were on unpaid leave because of illness, bad weather, disputes between labor and management, or personal reasons. Members of the Armed Forces stationed in the United States are also included in the employed total.

People are classified as *unemployed*, regardless of their eligibility for unemployment benefits or public assistance, if they meet all of the following criteria: They had no employment during the survey week; they were available for work at that time; and they made specific efforts to find employment sometime during the prior 4 weeks. Persons laid off from their former jobs and awaiting recall and those expecting to report to a job within 30 days need not be looking for work to be counted as unemployed.

The *labor force* equals the sum of the number employed and the number unemployed. The *unemployment rate* is the percentage of unemployed people in the labor force (civilian plus the resident Armed Forces). Table A-5 presents a special grouping of seven measures of unemployment based on varying definitions of unemployment and the labor force. The definitions are provided in the table. The most restrictive definition yields U-1 and the most comprehensive yields U-7. The overall unemployment rate is U-5a, while U-5b represents the same measure with a civilian labor force base.

Unlike the household survey, the establishment survey only counts wage and salary employees whose names appear on the payroll records of nonagricultural firms. As a result, there are many differences between the two surveys, among which are the following:

— The household survey, although based on a smaller sample, reflects a larger segment of the population; the establishment survey excludes agriculture, the self-employed, unpaid family workers, private household workers, and members of the resident Armed Forces;

— The household survey includes people on unpaid leave among the employed; the establishment survey does not;

— The household survey is limited to those 16 years of age and older; the establishment survey is not limited by age;

— The household survey has no duplication of individuals, because each individual is counted only once; in the establishment survey, employees working at more than one job or otherwise appearing on more than one payroll would be counted separately for each appearance.

Other differences between the two surveys are described in "Comparing Employment Estimates from Household and Payroll Surveys," which may be obtained from the BLS upon request.

Seasonal adjustment

Over the course of a year, the size of the Nation's labor force and the levels of employment and unemployment undergo sharp fluctuations due to such seasonal events as changes in weather, reduced or expanded production, harvests, major holidays, and the opening and closing of schools. For example, the labor force increases by a large number each June, when schools close and many young people enter the job market. The effect of such seasonal variation can be very large; over the course of a year, for example, seasonality may account for as much as 95 percent of the month-to-month changes in unemployment.

Because these seasonal events follow a more or less regular pattern each year, their influence on statistical trends can be eliminated by adjusting the statistics from month to month. These adjustments make nonseasonal developments, such as declines in economic activity or increases in the participation of women in the labor force, easier to spot. To return to the school's-out example, the large number of people entering the labor force each June is likely to obscure any other changes that have taken place since May, making it difficult to determine if the level of economic activity has risen or declined. However, because the effect of students finishing school in previous years is known, the statistics for the current year can be adjusted to allow for a comparable change. Insofar as the seasonal adjustment is made correctly, the adjusted figure provides a more useful tool with which to analyze changes in economic activity.

Measures of labor force, employment, and unemployment contain components such as age and sex. Statistics for all employees, production workers, average weekly hours, and average hourly earnings include components based on the employer's industry. All these statistics can be seasonally adjusted either by adjusting the total or by adjusting each of the components and combining them. The second procedure usually yields more accurate information and is therefore followed by BLS. For example, the seasonally adjusted figure for the labor force is the sum of eight seasonally adjusted civilian employment components, plus the resident Armed Forces total (not adjusted for seasonality), and four seasonally adjusted unemployment components; the total for unemployment is the sum of the four unemployment components; and the overall unemployment rate is derived by dividing the resulting estimate of total unemployment by the estimate of the labor force.

The numerical factors used to make the seasonal adjustments are recalculated regularly. For the household survey, the factors are calculated for the January-June period and again for the July-December period. The January revision is applied to data that have been published over the previous 5 years. For the establishment survey, updated factors for seasonal adjustment are calculated only once a year, along with the introduction of new benchmarks which are discussed at the end of the next section.

Sampling variability

Statistics based on the household and establishment surveys are subject to sampling error, that is, the estimate of the number of people employed and the other estimates drawn from these surveys probably differ from the figures that would be obtained from a complete census, even if the same questionnaires and procedures were used. In the household survey, the amount of the differences can be expressed in terms of standard errors. The numerical value of a standard error depends upon the size of the sample, the results of the survey, and other factors. However, the numerical value is always such that the chances are approximately 68 out of 100 that an estimate based on the sample will differ by no more than the standard error from the results of a complete census. The chances are approximately 90 out of 100 that an estimate based on the sample will differ by no more than 1.6 times the standard error from the results of a complete census. At approximately the 90-percent level of confidence—the confidence limits used by BLS in its analyses—the error for the monthly change in total employment is on the order of plus or minus 358,000; for total unemployment it is 224,000; and, for the overall unemployment rate, it is 0.19 percentage point. These figures do not mean that the sample results are off by these magnitudes but, rather, that the chances are approximately 90 out of 100 that the "true" level or rate would not be expected to differ from the estimates by more than these amounts.

Sampling errors for monthly surveys are reduced when the data are cumulated for several months, such as quarterly or annually. Also, as a general rule, the smaller the estimate, the larger the sampling error. Therefore, relatively speaking, the estimate of the size of the labor force is subject to less error than is the estimate of the number unemployed. And, among the unemployed, the sampling error for the jobless rate of adult men, for example, is much smaller than is the error for the jobless rate of teenagers. Specifically, the error on monthly change in the jobless rate for men is .25 percentage point; for teenagers, it is 1.29 percentage points.

In the establishment survey, estimates for the 2 most current months are based on incomplete returns; for this reason, these estimates are labeled preliminary in the tables. When all the returns in the sample have been received, the estimates are revised. In other words, data for the month of September are published in preliminary form in October and November and in final form in December. To remove errors that build up over time, a comprehensive count of the employed is conducted each year. The results of this survey are used to establish new benchmarks—comprehensive counts of employment—against which month-to-month changes can be measured. The new benchmarks also incorporate changes in the classification of industries and allow for the formation of new establishments.

Additional statistics and other information

In order to provide a broad view of the Nation's employment situation, BLS regularly publishes a wide variety of data in this news release. More comprehensive statistics are contained in *Employment and Earnings*, published each month by BLS. It is available for $8.50 per issue or $22.00 per year from the U.S. Government Printing Office, Washington, D.C., 20204. A check or money order made out to the Superintendent of Documents must accompany all orders.

Employment and Earnings also provides approximations of the standard errors for the household survey data published in this release. For unemployment and other labor force categories, the standard errors appear in tables B through J of its "Explanatory Notes." Measures of the reliability of the data drawn from the establishment survey and the actual amounts of revision due to benchmark adjustments are provided in tables M, O, P, and Q of that publication.

Table A-1. Employment status of the population, including Armed Forces in the United States, by sex

(Numbers in thousands)

Employment status and sex	Not seasonally adjusted			Seasonally adjusted[1]					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
TOTAL									
Noninstitutional population[2]	184,079	185,847	185,964	184,079	185,370	185,571	185,705	185,847	185,964
Labor force[2]	120,082	121,683	121,996	121,098	122,472	122,924	123,084	122,639	123,055
Participation rate[3]	65.2	65.5	65.6	65.8	66.1	66.2	66.3	66.0	66.2
Total employed[2]	112,776	114,603	115,637	113,541	115,494	115,878	116,145	115,838	116,445
Employment-population ratio[4]	61.3	61.7	62.2	61.7	62.3	62.4	62.5	62.3	62.6
Resident Armed Forces	1,735	1,736	1,732	1,735	1,750	1,749	1,736	1,736	1,732
Civilian employed	111,041	112,867	113,905	111,806	113,744	114,129	114,409	114,103	114,713
Agriculture	3,223	2,902	3,193	3,250	3,215	3,293	3,228	3,204	3,228
Nonagricultural industries	107,817	109,964	110,712	108,556	110,529	110,836	111,182	110,899	111,485
Unemployed	7,306	7,080	6,359	7,557	6,978	7,046	6,939	6,801	6,610
Unemployment rate[5]	6.1	5.8	5.2	6.2	5.7	5.7	5.6	5.5	5.4
Not in labor force	63,997	64,164	63,968	62,981	62,898	62,647	62,621	63,208	62,909
Men, 16 years and over									
Noninstitutional population[2]	88,271	89,168	89,225	88,271	88,924	89,033	89,099	89,168	89,225
Labor force[2]	66,996	67,521	67,798	67,604	68,030	68,243	68,343	68,148	68,445
Participation rate[3]	75.9	75.7	76.0	76.6	76.5	76.6	76.7	76.4	76.7
Total employed[2]	62,811	63,385	64,288	63,390	64,245	64,396	64,636	64,332	64,892
Employment-population ratio[4]	71.2	71.1	72.1	71.8	72.2	72.3	72.5	72.1	72.7
Resident Armed Forces	1,575	1,573	1,569	1,575	1,589	1,588	1,577	1,573	1,569
Civilian employed	61,236	61,812	62,719	61,815	62,656	62,808	63,059	62,759	63,323
Unemployed	4,185	4,136	3,510	4,214	3,785	3,847	3,707	3,816	3,553
Unemployment rate[5]	6.2	6.1	5.2	6.2	5.6	5.6	5.4	5.6	5.2
Women, 16 years and over									
Noninstitutional population[2]	95,808	96,679	96,739	95,808	96,446	96,538	96,606	96,679	96,739
Labor force[2]	53,085	54,173	54,198	53,494	54,442	54,681	54,740	54,491	54,610
Participation rate[3]	55.4	56.0	56.0	55.8	56.4	56.6	56.7	56.4	56.5
Total employed[2]	49,965	51,218	51,349	50,151	51,249	51,482	51,509	51,507	51,553
Employment-population ratio[4]	52.2	53.0	53.1	52.3	53.1	53.3	53.3	53.3	53.3
Resident Armed Forces	160	163	163	160	161	161	159	163	163
Civilian employed	49,805	51,055	51,186	49,991	51,088	51,321	51,350	51,344	51,390
Unemployed	3,120	2,955	2,849	3,343	3,193	3,200	3,231	2,985	3,057
Unemployment rate[5]	5.9	5.5	5.3	6.2	5.9	5.9	5.9	5.5	5.6

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[1] The population and Armed Forces figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Includes members of the Armed Forces stationed in the United States.

[3] Labor force as a percent of the noninstitutional population.

[4] Total employment as a percent of the noninstitutional population.

[5] Unemployment as a percent of the labor force (including the resident Armed Forces).

Table A-2. Employment status of the civilian population by sex and age

(Numbers in thousands)

Employment status, sex, and age	Not seasonally adjusted			Seasonally adjusted[1]					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
TOTAL									
Civilian noninstitutional population	182,344	184,111	184,232	182,344	183,620	183,822	183,969	184,111	184,232
Civilian labor force	118,347	119,957	120,264	119,363	120,722	121,175	121,348	120,903	121,323
Participation rate	64.9	65.2	65.3	65.5	65.7	65.9	66.0	65.7	65.9
Employed	111,041	112,867	113,905	111,806	113,744	114,129	114,409	114,103	114,713
Employment-population ratio[2]	60.9	61.3	61.8	61.3	61.9	62.1	62.2	62.0	62.3
Unemployed	7,306	7,090	6,359	7,557	6,978	7,046	6,938	6,801	6,610
Unemployment rate	6.2	5.9	5.3	6.3	5.8	5.8	5.7	5.6	5.4
Men, 20 years and over									
Civilian noninstitutional population	79,387	80,260	80,326	79,387	80,002	80,120	80,203	80,260	80,326
Civilian labor force	61,660	62,238	62,442	61,970	62,248	62,440	62,696	62,497	62,791
Participation rate	77.7	77.5	77.7	78.1	77.8	77.9	78.2	77.9	78.2
Employed	58,159	58,807	59,504	58,516	59,185	59,287	59,625	59,407	59,883
Employment-population ratio[2]	73.3	73.3	74.1	73.7	74.0	74.0	74.3	74.0	74.5
Agriculture	2,397	2,109	2,280	2,378	2,298	2,323	2,280	2,253	2,255
Nonagricultural industries	55,762	56,697	57,224	56,138	56,887	56,964	57,344	57,154	57,627
Unemployed	3,501	3,432	2,938	3,454	3,063	3,154	3,071	3,089	2,909
Unemployment rate	5.7	5.5	4.7	5.6	4.9	5.1	4.9	4.9	4.6
Women, 20 years and over									
Civilian noninstitutional population	88,395	89,261	89,307	88,395	89,010	89,110	89,178	89,261	89,307
Civilian labor force	49,346	50,476	50,465	49,494	50,361	50,558	50,640	50,542	50,612
Participation rate	55.8	56.5	56.5	56.0	56.6	56.7	56.8	56.6	56.7
Employed	46,767	48,051	48,162	46,761	47,750	47,977	48,005	48,132	48,170
Employment-population ratio[2]	52.9	53.8	53.9	52.9	53.6	53.8	53.8	53.9	53.9
Agriculture	557	575	637	603	643	646	654	656	692
Nonagricultural industries	46,210	47,476	47,525	46,158	47,107	47,331	47,351	47,476	47,478
Unemployed	2,579	2,425	2,303	2,733	2,611	2,581	2,635	2,411	2,442
Unemployment rate	5.2	4.8	4.6	5.5	5.2	5.1	5.2	4.8	4.8
Both sexes, 16 to 19 years									
Civilian noninstitutional population	14,562	14,591	14,598	14,562	14,609	14,592	14,588	14,591	14,598
Civilian labor force	7,341	7,243	7,357	7,899	8,113	8,177	8,011	7,865	7,919
Participation rate	50.4	49.6	50.4	54.2	55.5	56.0	54.9	53.9	54.2
Employed	6,115	6,009	6,239	6,529	6,809	6,865	6,779	6,564	6,660
Employment-population ratio[2]	42.0	41.2	42.7	44.8	46.6	47.0	46.5	45.0	45.6
Agriculture	269	218	276	269	274	323	293	295	280
Nonagricultural industries	5,845	5,791	5,962	6,260	6,535	6,542	6,486	6,269	6,380
Unemployed	1,226	1,234	1,118	1,370	1,304	1,312	1,232	1,301	1,259
Unemployment rate	16.7	17.0	15.2	17.3	16.1	16.0	15.4	16.5	15.9

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[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
WHITE									
Civilian noninstitutional population	156,676	157,868	157,943	156,676	157,552	157,676	157,773	157,868	157,943
Civilian labor force	102,168	103,388	103,758	102,972	103,907	104,252	104,530	104,171	104,574
Participation rate	65.2	65.5	65.7	65.7	66.0	66.1	66.3	66.0	66.2
Employed	96,744	98,202	99,141	97,338	98,779	99,044	99,474	99,274	99,751
Employment-population ratio[2]	61.7	62.2	62.8	62.1	62.7	62.8	63.0	62.9	63.2
Unemployed	5,423	5,186	4,617	5,634	5,128	5,208	5,056	4,897	4,824
Unemployment rate	5.3	5.0	4.5	5.5	4.9	5.0	4.8	4.7	4.6
Men, 20 years and over									
Civilian labor force	53,874	54,307	54,430	54,124	54,368	54,455	54,650	54,522	54,699
Participation rate	78.0	77.9	78.1	78.4	78.2	78.3	78.5	78.2	78.5
Employed	51,205	51,723	52,275	51,460	52,046	52,053	52,389	52,245	52,538
Employment-population ratio[2]	74.2	74.2	75.0	74.5	74.9	74.8	75.2	75.0	75.4
Unemployed	2,669	2,584	2,155	2,664	2,322	2,402	2,260	2,277	2,161
Unemployment rate	5.0	4.8	4.0	4.9	4.3	4.4	4.1	4.2	4.0
Women, 20 years and over									
Civilian labor force	41,877	42,789	42,882	41,984	42,569	42,710	42,915	42,841	42,986
Participation rate	55.3	56.1	56.2	55.5	55.9	56.1	56.3	56.2	56.3
Employed	40,041	41,101	41,297	40,032	40,712	40,898	40,985	41,183	41,297
Employment-population ratio[2]	52.9	53.9	54.1	52.9	53.5	53.7	53.8	54.0	54.1
Unemployed	1,836	1,688	1,586	1,952	1,857	1,813	1,930	1,658	1,689
Unemployment rate	4.4	3.9	3.7	4.6	4.4	4.2	4.5	3.9	3.9
Both sexes, 16 to 19 years									
Civilian labor force	6,417	6,312	6,445	6,864	6,970	7,087	6,965	6,807	6,889
Participation rate	53.7	53.1	54.2	57.5	58.6	59.6	58.6	57.2	58.0
Employed	5,499	5,378	5,569	5,846	6,021	6,095	6,100	5,845	5,916
Employment-population ratio[2]	46.0	45.2	46.9	48.9	50.6	51.2	51.3	49.1	49.8
Unemployed	918	934	876	1,018	949	992	865	962	973
Unemployment rate	14.3	14.8	13.6	14.8	13.6	14.0	12.4	14.1	14.1
Men	15.9	17.1	14.1	16.3	14.9	14.4	12.2	15.7	14.5
Women	12.7	12.3	13.1	13.3	12.3	13.6	12.7	12.4	13.7
BLACK									
Civilian noninstitutional population	20,279	20,566	20,622	20,279	20,508	20,539	20,569	20,596	20,622
Civilian labor force	12,639	12,932	12,941	12,778	13,215	13,222	13,168	13,098	13,078
Participation rate	62.3	62.9	62.8	63.0	64.4	64.4	64.0	63.6	63.4
Employed	11,024	11,273	11,394	11,114	11,605	11,608	11,504	11,420	11,482
Employment-population ratio[2]	54.4	54.7	55.3	54.8	56.6	56.5	55.9	55.4	55.7
Unemployed	1,615	1,659	1,547	1,664	1,610	1,614	1,663	1,678	1,597
Unemployment rate	12.8	12.8	12.0	13.0	12.2	12.2	12.6	12.8	12.2
Men, 20 years and over									
Civilian labor force	5,958	6,081	6,142	5,980	6,043	6,115	6,166	6,127	6,163
Participation rate	74.2	74.4	75.1	74.4	74.3	75.0	75.6	75.0	75.3
Employed	5,275	5,369	5,467	5,322	5,430	5,497	5,472	5,429	5,511
Employment-population ratio[2]	65.7	65.7	66.8	66.3	66.8	67.5	67.1	66.4	67.3
Unemployed	683	712	675	658	613	618	694	699	652
Unemployment rate	11.5	11.7	11.0	11.0	10.1	10.1	11.3	11.4	10.6
Women, 20 years and over									
Civilian labor force	5,912	6,112	6,062	5,943	6,224	6,244	6,131	6,136	6,093
Participation rate	58.6	59.6	59.1	58.9	61.0	61.1	59.9	59.9	59.4
Employed	5,259	5,443	5,412	5,254	5,544	5,550	5,495	5,465	5,407
Employment-population ratio[2]	52.1	53.1	52.7	52.1	54.3	54.3	53.7	53.3	52.7
Unemployed	653	668	650	689	680	694	636	671	686
Unemployment rate	11.1	10.9	10.7	11.6	10.9	11.1	10.4	10.9	11.3
Both sexes, 16 to 19 years									
Civilian labor force	769	740	737	855	948	863	870	834	822
Participation rate	35.6	34.0	33.8	39.6	43.7	39.8	40.0	38.3	37.7
Employed	490	461	516	538	631	561	537	526	564
Employment-population ratio[2]	22.7	21.2	23.7	24.9	29.1	25.8	24.7	24.2	25.9
Unemployed	279	278	221	317	317	302	333	308	258
Unemployment rate	36.3	37.6	30.0	37.1	33.4	35.0	38.3	36.9	31.4
Men	36.1	40.2	24.8	37.8	33.5	35.1	42.0	39.0	27.6
Women	36.4	35.3	35.8	36.3	33.4	34.9	34.7	35.0	35.5

See footnotes at end of table.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin—Continued

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
HISPANIC ORIGIN									
Civilian noninstitutional population	12,770	13,192	13,230	12,770	13,082	13,115	13,153	13,192	13,230
Civilian labor force	8,415	8,726	8,773	8,468	8,772	8,879	9,017	8,803	8,828
Participation rate	65.9	66.1	66.3	66.3	67.1	67.7	68.6	66.7	66.7
Employed	7,678	7,990	8,002	7,686	8,058	8,238	8,268	8,079	8,010
Employment-population ratio[2]	60.1	60.6	60.5	60.2	61.6	62.8	62.9	61.2	60.5
Unemployed	737	736	771	782	714	642	749	724	818
Unemployment rate	8.8	8.4	8.8	9.2	8.1	7.2	8.3	8.2	9.3

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

Table A-4. Selected employment indicators

(In thousands)

Category	Not seasonally adjusted			Seasonally adjusted					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
CHARACTERISTIC									
Civilian employed, 16 years and over	111,041	112,867	113,905	111,806	113,744	114,129	114,409	114,103	114,713
Married men, spouse present	39,887	40,157	40,338	40,021	40,711	40,404	40,475	40,481	40,459
Married women, spouse present	28,157	28,776	28,888	28,130	28,249	28,441	28,707	28,805	28,859
Women who maintain families	6,020	6,178	6,109	5,971	6,227	6,168	6,157	6,160	6,055
MAJOR INDUSTRY AND CLASS OF WORKER									
Agriculture:									
Wage and salary workers	1,610	1,467	1,888	1,599	1,599	1,666	1,677	1,648	1,678
Self-employed workers	1,452	1,309	1,356	1,488	1,450	1,454	1,414	1,423	1,385
Unpaid family workers	162	126	149	170	156	138	114	142	155
Nonagricultural industries:									
Wage and salary workers	99,495	101,514	101,897	100,106	101,997	102,507	102,683	102,279	102,538
Government	16,748	17,195	17,236	16,518	17,064	17,197	16,948	16,908	17,015
Private industries	82,747	84,319	84,660	83,588	84,933	85,310	85,735	85,371	85,523
Private households	1,223	1,086	1,087	1,234	1,200	1,147	1,170	1,175	1,092
Other industries	81,524	83,233	83,573	82,354	83,733	84,163	84,565	84,196	84,431
Self-employed workers	8,052	8,190	8,533	8,139	8,280	8,150	8,312	8,366	8,637
Unpaid family workers	270	261	283	268	248	237	228	248	281
PERSONS AT WORK PART TIME[1]									
All industries:									
Part time for economic reasons	5,030	5,129	4,851	5,394	5,262	5,367	5,566	5,343	5,194
Slack work	2,269	2,520	2,167	2,345	2,284	2,396	2,478	2,520	2,236
Could only find part-time work	2,485	2,347	2,287	2,725	2,638	2,640	2,598	2,535	2,502
Voluntary part time	14,943	15,567	16,082	13,940	14,711	14,571	14,572	14,603	15,016
Nonagricultural industries:									
Part time for economic reasons	4,783	4,932	4,624	5,104	5,004	5,145	5,254	5,106	4,924
Slack work	2,092	2,371	2,053	2,163	2,111	2,260	2,327	2,325	2,121
Could only find part-time work	2,420	2,307	2,196	2,648	2,552	2,566	2,457	2,475	2,397
Voluntary part time	14,431	15,131	15,540	13,544	14,222	14,096	14,123	14,141	14,592

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial dispute.

Table A-5. Range of unemployment measures based on varying definitions of unemployment and the labor force, seasonally adjusted

(Percent)

Measure	Quarterly averages					Monthly data		
	1987				1988	1988		
	I	II	III	IV	I	Feb.	Mar.	Apr.
U-1 Persons unemployed 15 weeks or longer as a percent of the civilian labor force	1.8	1.7	1.6	1.5	1.4	1.4	1.4	1.3
U-2 Job losers as a percent of the civilian labor force	3.2	3.0	2.8	2.7	2.6	2.6	2.6	2.4
U-3 Unemployed persons 25 years and over as a percent of the civilian labor force	5.1	4.8	4.6	4.5	4.4	4.5	4.2	4.1
U-4 Unemployed full-time jobseekers as a percent of the full-time civilian labor force	6.2	5.9	5.6	5.5	5.4	5.3	5.3	5.1
U-5a Total unemployed as a percent of the labor force, including the resident Armed Forces	6.5	6.2	5.9	5.8	5.6	5.6	5.5	5.4
U-5b Total unemployed as a percent of the civilian labor force	6.6	6.3	6.0	5.9	5.7	5.7	5.6	5.4
U-6 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons as a percent of the civilian labor force less 1/2 of the part-time labor force	9.0	8.5	8.2	8.1	8.0	8.0	7.9	7.6
U-7 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons plus discouraged workers as a percent of the civilian labor force plus discouraged workers less 1/2 of the part-time labor force	9.9	9.3	9.0	8.8	8.8	N.A.	N.A.	N.A.

N.A. = not available.

Table A-6. Selected unemployment indicators, seasonally adjusted

Category	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
CHARACTERISTIC									
Total, 16 years and over	7,557	6,801	6,610	6.3	5.8	5.8	5.7	5.6	5.4
Men, 16 years and over	4,214	3,816	3,553	6.4	5.7	5.8	5.6	5.7	5.3
Men, 20 years and over	3,454	3,069	2,909	5.8	4.9	5.1	4.9	4.9	4.6
Women, 16 years and over	3,343	2,985	3,057	6.3	5.9	5.9	5.9	5.5	5.6
Women, 20 years and over	2,733	2,411	2,442	5.5	5.2	5.1	5.2	4.8	4.8
Both sexes, 16 to 19 years	1,370	1,301	1,259	17.3	16.1	16.0	15.4	16.5	15.9
Married men, spouse present	1,699	1,422	1,282	4.1	3.4	3.6	3.4	3.4	3.0
Married women, spouse present	1,298	1,186	1,128	4.4	4.3	4.2	4.1	4.0	3.8
Women who maintain families	621	497	573	9.4	8.4	6.9	8.3	7.5	8.7
Full-time workers	6,083	5,498	5,302	5.9	5.4	5.4	5.3	5.3	5.1
Part-time workers	1,473	1,330	1,299	8.6	8.0	8.3	7.9	7.7	7.4
Labor force time lost[2]	—	—	—	7.3	6.6	6.6	6.6	6.5	6.2
INDUSTRY									
Nonagricultural private wage and salary workers	5,624	5,061	4,793	6.3	5.7	5.8	5.7	5.6	5.3
Goods-producing industries	2,204	1,880	1,903	7.7	6.4	7.1	6.9	6.5	6.5
Mining	96	63	70	11.2	8.0	7.7	7.8	7.9	8.4
Construction	739	663	679	12.0	10.6	12.2	11.0	10.7	10.6
Manufacturing	1,369	1,153	1,154	6.3	5.1	5.6	5.6	5.2	5.3
Durable goods	802	683	621	6.2	4.8	5.5	5.9	5.2	4.8
Nondurable goods	567	471	534	6.4	5.6	5.8	5.3	5.3	6.0
Service-producing industries	3,420	3,181	2,890	5.7	5.3	5.3	5.1	5.2	4.7
Transportation and public utilities	289	272	243	4.7	4.6	3.6	3.6	4.2	3.8
Wholesale and retail trade	1,633	1,564	1,330	7.1	6.2	6.1	6.4	6.8	5.9
Finance and service industries	1,498	1,345	1,317	4.8	4.8	4.9	4.5	4.2	4.1
Government workers	605	485	520	3.5	3.2	3.0	2.8	2.8	3.0
Agricultural wage and salary workers	168	203	199	9.5	10.9	11.5	10.2	11.0	10.6

[1] Unemployment as a percent of the civilian labor force.

[2] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

Table A-7. Duration of unemployment

(Numbers in thousands)

Weeks of unemployment	Not seasonally adjusted			Seasonally adjusted					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
DURATION									
Less than 5 weeks	2,844	2,759	2,781	3,195	3,229	3,089	3,084	3,009	3,125
5 to 14 weeks	2,020	2,332	1,751	2,256	1,968	2,263	2,145	2,101	1,958
15 weeks and over	2,442	1,999	1,827	2,060	1,791	1,733	1,740	1,722	1,540
15 to 26 weeks	1,297	1,108	963	984	892	839	841	887	725
27 weeks and over	1,145	891	864	1,076	899	894	899	835	816
Average (mean) duration, in weeks	16.0	14.3	14.4	14.8	14.2	14.4	14.4	13.7	13.4
Median duration, in weeks	8.3	8.0	6.8	6.9	6.0	6.4	6.4	6.6	5.6
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 5 weeks	38.9	38.9	43.7	42.5	46.2	43.6	44.3	44.0	47.2
5 to 14 weeks	27.6	32.9	27.5	30.0	28.2	31.9	30.8	30.8	29.5
15 weeks and over	33.4	28.2	28.7	27.4	25.6	24.5	25.0	25.2	23.3
15 to 26 weeks	17.8	15.6	15.1	13.1	12.8	11.8	12.1	13.0	10.9
27 weeks and over	15.7	12.6	13.6	14.3	12.9	12.6	12.9	12.2	12.3

Table A-8. Reason for unemployment

(Numbers in thousands)

Reasons	Not seasonally adjusted			Seasonally adjusted					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
NUMBER OF UNEMPLOYED									
Job losers	3,788	3,506	2,977	3,705	3,200	3,209	3,207	3,139	2,916
On layoff	923	1,083	785	963	856	888	884	899	821
Other job losers	2,865	2,423	2,192	2,742	2,344	2,320	2,323	2,240	2,095
Job leavers	860	1,012	895	955	946	1,082	961	1,075	993
Reentrants	1,812	1,784	1,643	1,965	1,945	1,917	1,951	1,756	1,784
New entrants	846	789	843	918	909	885	864	887	915
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	51.8	49.5	46.8	49.1	45.7	45.2	45.9	45.8	44.1
On layoff	12.6	15.3	12.3	12.8	12.2	12.5	12.7	13.1	12.4
Other job losers	39.2	34.2	34.5	36.4	33.5	32.7	33.3	32.7	31.7
Job leavers	11.8	14.3	14.1	12.7	13.5	15.3	13.8	15.7	15.0
Reentrants	24.8	25.2	25.8	26.1	27.8	27.0	27.9	25.6	27.0
New entrants	11.6	11.1	13.3	12.2	13.0	12.5	12.4	12.9	13.8
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE									
Job losers	3.2	2.9	2.5	3.1	2.7	2.6	2.6	2.6	2.4
Job leavers	.7	.8	.7	.8	.8	.9	.8	.9	.8
Reentrants	1.5	1.5	1.4	1.6	1.6	1.6	1.6	1.5	1.5
New entrants	.7	.7	.7	.8	.8	.7	.7	.7	.8

Table A-9. Unemployed persons by sex and age, seasonally adjusted

Sex and age	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
Total, 16 years and over	7,557	6,801	6,610	6.3	5.8	5.8	5.7	5.6	5.4
16 to 24 years	2,902	2,637	2,532	12.8	11.2	11.6	11.1	11.7	11.2
16 to 19 years	1,370	1,301	1,259	17.3	16.1	16.0	15.4	16.5	15.9
16 to 17 years	620	569	580	18.9	17.8	18.7	17.4	17.6	17.8
18 to 19 years	733	732	658	15.9	14.7	14.5	13.9	15.8	14.2
20 to 24 years	1,532	1,336	1,273	10.1	8.5	9.1	8.7	9.1	8.7
25 years and over	4,867	4,161	4,082	4.8	4.5	4.5	4.5	4.2	4.1
25 to 54 years	4,143	3,730	3,625	5.1	4.8	4.7	4.7	4.5	4.3
55 years and over	505	441	446	3.4	3.2	3.5	3.3	2.9	2.9
Men, 16 years and over	4,214	3,816	3,553	6.4	5.7	5.8	5.6	5.7	5.3
16 to 24 years	1,576	1,423	1,315	13.1	11.7	12.2	11.3	12.1	11.2
16 to 19 years	760	727	644	18.7	17.2	16.4	15.6	17.8	15.8
16 to 17 years	360	313	291	21.0	19.3	19.4	16.9	18.5	17.2
18 to 19 years	401	414	352	17.1	15.3	14.9	14.7	17.3	14.7
20 to 24 years	816	696	671	10.3	8.7	9.9	9.0	9.1	8.8
25 years and over	2,651	2,385	2,243	4.9	4.4	4.4	4.3	4.3	4.1
25 to 54 years	2,304	2,089	1,951	5.1	4.6	4.5	4.5	4.5	4.2
55 years and over	327	299	276	3.7	3.2	4.0	3.4	3.4	3.1
Women, 16 years and over	3,343	2,985	3,057	6.3	5.9	5.9	5.9	5.5	5.6
16 to 24 years	1,326	1,214	1,217	12.0	10.7	10.9	10.8	11.3	11.3
16 to 19 years	610	574	615	15.9	14.8	15.6	15.1	15.2	16.0
16 to 17 years	280	255	289	16.6	16.2	17.9	18.0	16.6	18.4
18 to 19 years	332	318	306	14.7	14.1	14.1	13.1	14.2	13.7
20 to 24 years	716	640	602	10.0	8.4	8.2	8.4	9.1	8.7
25 years and over	2,016	1,776	1,839	4.8	4.7	4.6	4.7	4.1	4.2
25 to 54 years	1,839	1,641	1,674	5.1	4.9	4.9	4.9	4.4	4.5
55 years and over	178	142	170	2.9	3.3	2.8	3.1	2.3	2.7

[1] Unemployment as a percent of the civilian labor force.

Table A-10. Employment status of black and other workers

(Numbers in thousands)

Employment status	Not seasonally adjusted			Seasonally adjusted[1]					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
Civilian noninstitutional population	25,667	26,243	26,289	25,667	26,068	26,146	26,196	26,243	26,289
Civilian labor force	16,179	16,569	16,506	16,402	16,853	16,926	16,779	16,779	16,733
Participation rate	63.0	63.1	62.8	63.9	64.7	64.7	64.1	63.9	63.7
Employed	14,296	14,664	14,764	14,467	15,008	15,076	14,884	14,853	14,939
Employment-population ratio[2]	55.7	55.9	56.2	56.4	57.6	57.7	56.8	56.6	56.8
Unemployed	1,883	1,905	1,742	1,935	1,845	1,850	1,895	1,926	1,795
Unemployment rate	11.6	11.5	10.6	11.8	10.9	10.9	11.3	11.5	10.7
Not in labor force	9,488	9,674	9,783	9,265	9,215	9,220	9,417	9,464	9,556

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-11. Occupational status of the employed and unemployed, not seasonally adjusted

(Numbers in thousands)

Occupation	Civilian employed		Unemployed		Unemployment rate	
	Apr. 1987	Apr. 1988	Apr. 1987	Apr. 1988	Apr. 1987	Apr. 1988
Total, 16 years and over[1]	111,041	113,905	7,306	6,359	6.2	5.3
Managerial and professional specialty	27,418	29,238	596	511	2.1	1.7
Executive, administrative, and managerial	12,981	14,152	335	278	2.5	1.9
Professional specialty	14,437	15,086	261	233	1.8	1.5
Technical, sales, and administrative support	34,498	35,401	1,547	1,301	4.3	3.5
Technicians and related support	3,186	3,476	118	94	3.6	2.6
Sales occupations	13,164	13,617	696	586	5.0	4.1
Administrative support, including clerical	18,148	18,308	733	620	3.9	3.3
Service occupations	15,082	15,114	1,234	1,032	7.6	6.4
Private household	960	832	57	56	5.6	6.3
Protective service	1,886	1,838	100	64	5.0	3.4
Service, except private household and protective	12,236	12,444	1,076	911	8.1	6.8
Precision production, craft, and repair	13,469	13,552	941	762	6.5	5.3
Mechanics and repairers	4,381	4,522	202	153	4.4	3.3
Construction trades	4,894	4,972	534	416	9.8	7.7
Other precision production, craft, and repair	4,193	4,058	206	193	4.7	4.5
Operators, fabricators, and laborers	17,076	17,196	1,855	1,621	9.8	8.6
Machine operators, assemblers, and inspectors	7,887	7,855	817	678	9.4	7.9
Transportation and material moving occupations	4,638	4,627	366	283	7.3	5.8
Handlers, equipment cleaners, helpers, and laborers	4,551	4,714	672	659	12.9	12.3
Construction laborers	714	739	204	208	22.2	22.0
Other handlers, equipment cleaners, helpers, and laborers	3,837	3,975	468	451	10.9	10.2
Farming, forestry, and fishing	3,498	3,404	242	230	6.5	6.3

[1] Persons with no previous work experience and those whose last job was in the Armed Forces are included in the unemployed total.

Table A-12. Employment status of male Vietnam-era veterans and nonveterans by age, not seasonally adjusted

(Numbers in thousands)

Veteran status and age	Civilian noninstitutional population		Civilian labor force							
			Total		Employed		Unemployed			
							Number		Percent of labor force	
	Apr. 1987	Apr. 1988	Apr. 1987	Apr. 1988	Apr. 1987	Apr. 1988	Apr. 1987	Apr. 1988	Apr. 1987	Apr. 1988
VIETNAM-ERA VETERANS										
Total, 30 years and over	7,816	7,891	7,277	7,290	6,896	6,981	381	309	5.2	4.2
30 to 44 years	6,232	5,984	5,983	5,712	5,670	5,452	313	260	5.2	4.6
30 to 34 years	988	750	930	707	839	648	91	59	9.8	8.3
35 to 39 years	2,707	2,256	2,596	2,152	2,475	2,071	121	81	4.7	3.8
40 to 44 years	2,557	2,978	2,457	2,853	2,356	2,733	101	120	4.1	4.2
45 years and over	1,584	1,907	1,294	1,578	1,226	1,529	68	49	5.3	3.1
NONVETERANS										
Total, 30 to 44 years	19,252	20,206	18,164	19,025	17,302	18,221	862	804	4.7	4.2
30 to 34 years	8,769	8,993	8,342	8,495	7,924	8,114	418	381	5.0	4.5
35 to 39 years	6,110	6,718	5,750	6,351	5,490	6,114	260	237	4.5	3.7
40 to 44 years	4,373	4,495	4,072	4,179	3,888	3,993	184	186	4.5	4.5

NOTE: Male Vietnam-era veterans are men who served in the Armed Forces between August 5, 1964 and May 7, 1975. Nonveterans are men who have never served in the Armed Forces; published data are limited to those 30 to 44 years of age, the group that most closely corresponds to the bulk of the Vietnam-era veteran population.

Table A-13. Employment status of the civilian population for eleven large States

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
California									
Civilian noninstitutional population	20,440	20,860	20,894	20,440	20,751	20,787	20,824	20,860	20,894
Civilian labor force	13,665	13,958	14,037	13,710	13,950	13,981	14,032	13,976	14,077
Employed	12,876	13,218	13,338	12,904	13,221	13,267	13,279	13,272	13,362
Unemployed	789	740	699	806	729	714	753	704	715
Unemployment rate	5.8	5.3	5.0	5.9	5.2	5.1	5.4	5.0	5.1
Florida									
Civilian noninstitutional population	9,378	9,609	9,626	9,378	9,548	9,568	9,588	9,609	9,626
Civilian labor force	5,768	6,045	6,035	5,830	5,990	5,993	6,013	6,066	6,093
Employed	5,469	5,758	5,731	5,513	5,681	5,698	5,695	5,771	5,773
Unemployed	299	287	304	317	309	295	318	295	320
Unemployment rate	5.2	4.7	5.0	5.4	5.2	4.9	5.3	4.9	5.3
Illinois									
Civilian noninstitutional population	8,727	8,770	8,773	8,727	8,761	8,764	8,767	8,770	8,773
Civilian labor force	5,643	5,677	5,684	5,702	5,751	5,795	5,839	5,749	5,746
Employed	5,178	5,237	5,263	5,245	5,325	5,407	5,401	5,330	5,332
Unemployed	465	440	421	457	426	388	438	419	414
Unemployment rate	8.2	7.8	7.4	8.0	7.4	6.7	7.5	7.3	7.2
Massachusetts									
Civilian noninstitutional population	4,583	4,599	4,599	4,583	4,596	4,597	4,598	4,599	4,599
Civilian labor force	3,056	3,169	3,135	3,082	3,088	3,142	3,147	3,190	3,163
Employed	2,938	3,055	3,044	2,965	2,998	3,036	3,041	3,096	3,072
Unemployed	118	114	92	117	90	106	106	94	91
Unemployment rate	3.9	3.6	2.9	3.8	2.9	3.4	3.4	2.9	2.9
Michigan									
Civilian noninstitutional population	6,916	6,977	6,981	6,916	6,962	6,966	6,972	6,977	6,981
Civilian labor force	4,452	4,449	4,511	4,492	4,529	4,472	4,530	4,488	4,556
Employed	4,073	4,064	4,171	4,115	4,137	4,018	4,149	4,117	4,220
Unemployed	379	385	340	377	392	454	381	371	336
Unemployment rate	8.5	8.6	7.5	8.4	8.7	10.2	8.4	8.3	7.4
New Jersey									
Civilian noninstitutional population	5,993	6,029	6,032	5,993	6,021	6,024	6,027	6,029	6,032
Civilian labor force	3,948	3,976	3,954	3,961	4,005	4,037	3,991	3,985	3,969
Employed	3,799	3,803	3,829	3,800	3,848	3,884	3,856	3,826	3,831
Unemployed	150	173	125	161	157	153	135	159	138
Unemployment rate	3.8	4.4	3.2	4.1	3.9	3.8	3.4	4.0	3.5
New York									
Civilian noninstitutional population	13,748	13,770	13,769	13,748	13,768	13,768	13,769	13,770	13,769
Civilian labor force	8,324	8,427	8,224	8,458	8,512	8,524	8,505	8,465	8,363
Employed	7,922	8,064	7,942	8,046	8,127	8,120	8,172	8,142	8,072
Unemployed	402	362	282	412	385	404	333	323	291
Unemployment rate	4.8	4.3	3.4	4.9	4.5	4.7	3.9	3.8	3.5
North Carolina									
Civilian noninstitutional population	4,793	4,864	4,869	4,793	4,846	4,852	4,858	4,864	4,869
Civilian labor force	3,206	3,265	3,252	3,251	3,291	3,291	3,300	3,296	3,300
Employed	3,067	3,136	3,142	3,098	3,144	3,135	3,180	3,171	3,177
Unemployed	139	129	109	153	147	156	120	125	123
Unemployment rate	4.3	4.0	3.4	4.7	4.5	4.7	3.6	3.8	3.7
Ohio									
Civilian noninstitutional population	8,144	8,188	8,190	8,144	8,178	8,181	8,184	8,188	8,190
Civilian labor force	5,215	5,295	5,257	5,236	5,264	5,330	5,355	5,369	5,277
Employed	4,847	4,879	4,941	4,854	4,937	4,983	5,013	4,958	4,945
Unemployed	368	416	316	382	327	347	342	411	332
Unemployment rate	7.1	7.9	6.0	7.3	6.2	6.5	6.4	7.7	6.3

See footnotes at end of table.

Table A-13. Employment status of the civilian population for eleven large States—Continued

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	Apr. 1987	Mar. 1988	Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988
Pennsylvania									
Civilian noninstitutional population	9,281	9,314	9,315	9,281	9,307	9,309	9,312	9,314	9,315
Civilian labor force	5,464	5,617	5,656	5,564	5,780	5,827	5,786	5,728	5,753
Employed	5,169	5,304	5,396	5,254	5,457	5,497	5,486	5,435	5,477
Unemployed	295	314	260	310	323	330	300	293	276
Unemployment rate	5.4	5.6	4.6	5.6	5.6	5.7	5.2	5.1	4.8
Texas									
Civilian noninstitutional population	12,012	12,056	12,058	12,012	12,048	12,050	12,053	12,056	12,058
Civilian labor force	8,100	8,167	8,235	8,197	8,286	8,255	8,306	8,252	8,334
Employed	7,429	7,493	7,658	7,481	7,646	7,595	7,610	7,582	7,711
Unemployed	671	674	577	716	640	660	696	670	623
Unemployment rate	8.3	8.3	7.0	8.7	7.7	8.0	8.4	8.1	7.5

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[1] These are the official Bureau of Labor Statistics' estimates used in the administration of Federal fund allocation programs.

[2] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and the seasonally adjusted columns.

Table B-1. Employees on nonagricultural payrolls by industry

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	Apr. 1987	Feb. 1988	Mar. 1988 p	Apr. 1988 p	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988 p	Apr. 1988 p
Total	101,381	102,969	103,754	104,600	101,598	103,612	103,827	104,365	104,661	104,835
Total private	84,030	85,396	86,045	86,914	84,560	86,341	86,560	87,063	87,290	87,461
Goods-producing	24,491	24,671	24,892	25,220	24,759	25,259	25,205	25,354	25,449	25,506
Mining	722	742	746	759	729	756	746	748	751	757
Oil and gas extraction	409.0	435.1	437.1	443.0	416	436	430	431	436	450
Construction	4,843	4,641	4,812	5,070	5,019	5,121	5,058	5,105	5,265	5,262
General building contractors	1,224.0	1,197.9	1,227.4	1,275.0	1,272	1,298	1,303	1,324	1,328	1,326
Manufacturing	18,926	19,288	19,334	19,391	19,011	19,382	19,401	19,421	19,433	19,477
Production workers	12,874	13,160	13,196	13,241	12,939	13,261	13,250	13,274	13,268	13,304
Durable goods	11,155	11,356	11,391	11,441	11,175	11,403	11,403	11,415	11,422	11,462
Production workers	7,396	7,560	7,589	7,630	7,406	7,597	7,588	7,606	7,601	7,638
Lumber and wood products	722.5	720.3	730.9	738.6	736	753	753	754	752	752
Furniture and fixtures	504.6	532.7	531.8	531.3	504	530	533	532	531	531
Stone, clay, and glass products	581.3	562.9	572.2	586.1	586	590	585	588	588	591
Primary metal industries	767.9	771.4	776.8	775.7	763	771	768	770	771	771
Blast furnaces and basic steel products	273.5	284.9	285.9	285.8	272	285	284	285	285	284
Fabricated metal products	1,418.3	1,448.5	1,453.1	1,459.2	1,423	1,451	1,452	1,456	1,457	1,464
Machinery, except electrical	2,024.4	2,106.5	2,120.2	2,128.4	2,022	2,085	2,097	2,102	2,110	2,126
Electrical and electronic equipment	2,086.0	2,123.9	2,127.1	2,126.6	2,092	2,120	2,130	2,128	2,134	2,133
Transportation equipment	2,013.2	2,006.7	2,001.2	2,011.8	2,011	2,018	2,005	2,001	1,997	2,010
Motor vehicles and equipment	847.1	819.8	822.9	829.6	847	832	820	819	820	830
Instruments and related products	693.1	702.7	702.9	703.5	694	701	702	704	703	704
Miscellaneous manufacturing	364.0	372.7	376.7	379.4	364	376	378	380	379	380
Nondurable goods	7,771	7,932	7,943	7,950	7,836	7,979	7,998	8,006	8,011	8,015
Production workers	5,478	5,600	5,607	5,611	5,533	5,644	5,662	5,668	5,667	5,666
Food and kindred products	1,579.3	1,603.5	1,599.0	1,594.6	1,642	1,645	1,661	1,662	1,659	1,658
Tobacco manufactures	53.1	55.9	53.5	51.2	56	56	57	56	55	54
Textile mill products	724.3	734.2	732.6	730.9	724	739	736	738	736	730
Apparel and other textile products	1,107.4	1,116.4	1,117.2	1,116.1	1,106	1,121	1,117	1,114	1,115	1,113
Paper and allied products	673.5	677.8	678.1	677.9	677	681	681	683	682	681
Printing and publishing	1,494.2	1,536.4	1,542.8	1,550.7	1,493	1,525	1,530	1,536	1,541	1,549
Chemicals and allied products	1,018.4	1,045.3	1,052.1	1,056.7	1,018	1,047	1,048	1,049	1,053	1,059
Petroleum and coal products	163.4	161.7	162.3	164.0	164	167	167	165	164	164
Rubber and miscellaneous plastics products	811.1	848.6	852.9	856.6	809	845	847	849	852	855
Leather and leather products	148.8	152.6	152.3	151.7	149	153	154	154	154	152
Service-producing	76,890	78,298	78,862	79,380	76,839	78,353	78,622	79,011	79,212	79,329
Transportation and public utilities	5,314	5,441	5,473	5,510	5,348	5,473	5,485	5,507	5,533	5,545
Transportation	3,099	3,206	3,233	3,262	3,124	3,233	3,244	3,261	3,282	3,288
Communication and public utilities	2,215	2,235	2,240	2,248	2,224	2,240	2,241	2,246	2,251	2,257
Wholesale trade	5,748	5,855	5,888	5,921	5,772	5,871	5,884	5,905	5,930	5,945
Durable goods	3,390	3,474	3,495	3,510	3,397	3,473	3,481	3,495	3,513	3,517
Nondurable goods	2,358	2,381	2,393	2,411	2,375	2,398	2,403	2,410	2,417	2,428
Retail trade	17,997	18,281	18,276	18,497	18,197	18,458	18,619	18,706	18,687	18,733
General merchandise stores	2,297.2	2,433.2	2,380.2	2,383.0	2,385	2,453	2,490	2,521	2,474	2,475
Food stores	2,920.7	3,004.5	3,005.2	3,003.8	2,953	2,996	3,019	3,032	3,042	3,037
Automotive dealers and service stations	1,970.3	2,012.1	2,032.5	2,041.9	1,978	2,013	2,023	2,041	2,053	2,050
Eating and drinking places	5,956.5	5,823.1	5,942.4	6,122.4	5,962	6,064	6,083	6,097	6,114	6,129
Finance, insurance, and real estate	6,530	6,625	6,651	6,689	6,558	6,668	6,684	6,689	6,701	6,736
Finance	3,259	3,287	3,287	3,288	3,272	3,301	3,309	3,304	3,297	3,301
Insurance	2,028	2,089	2,097	2,105	2,032	2,082	2,086	2,091	2,099	2,129
Real estate	1,243	1,249	1,267	1,296	1,254	1,285	1,289	1,294	1,305	1,306
Services	23,950	24,603	24,865	25,059	23,926	24,612	24,683	24,932	24,990	25,144
Business services	4,998.4	5,208.7	5,265.3	5,292.2	5,044	5,217	5,228	5,304	5,324	5,340
Health services	6,786.4	7,110.6	7,158.3	7,191.9	6,800	7,063	7,085	7,132	7,165	7,216
Government	17,351	17,573	17,709	17,694	17,038	17,271	17,267	17,302	17,371	17,374
Federal	2,932	2,955	2,963	2,959	2,933	2,981	2,977	2,976	2,969	2,962
State	4,046	4,098	4,124	4,140	3,943	3,996	3,996	4,002	4,019	4,035
Local	10,375	10,520	10,622	10,595	10,162	10,294	10,294	10,324	10,383	10,377

p = preliminary

Table B-2. Average weekly hours of production or nonsupervisory workers[1] on private nonagricultural payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted					
	Apr. 1987	Feb. 1988	Mar. 1988 p	Apr. 1988 p	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988 p	Apr. 1988 p
Total private	34.6	34.5	34.5	34.8	34.7	34.6	34.8	34.9	34.6	34.9
Mining	41.8	41.7	41.6	42.6	(2)	(2)	(2)	(2)	(2)	(2)
Construction	37.4	36.2	37.5	38.0	(2)	(2)	(2)	(2)	(2)	(2)
Manufacturing	40.4	40.7	41.0	41.0	40.6	41.0	41.2	41.0	41.0	41.2
Overtime hours	3.3	3.6	3.6	3.7	3.5	3.8	3.9	3.7	3.7	4.0
Durable goods	41.1	41.3	41.6	41.7	41.2	41.5	41.7	41.6	41.6	41.9
Overtime hours	3.4	3.7	3.8	4.0	3.6	3.9	4.0	3.8	3.8	4.2
Lumber and wood products	40.6	39.8	39.9	40.3	40.6	40.4	40.1	40.4	40.1	40.3
Furniture and fixtures	38.8	39.0	39.1	39.0	39.1	39.8	39.4	39.7	39.3	39.3
Stone, clay, and glass products	42.1	41.3	42.0	42.6	41.9	42.5	42.0	42.4	42.5	42.4
Primary metal industries	42.5	43.3	43.4	43.6	42.3	43.6	43.5	43.2	43.2	43.4
Blast furnaces and basic steel products	42.9	43.9	43.7	44.0	42.4	44.3	44.0	43.7	43.5	43.5
Fabricated metal products	40.9	41.3	41.5	41.7	41.2	41.7	41.9	41.5	41.5	42.0
Machinery, except electrical	41.6	42.5	42.7	42.6	41.8	42.5	42.8	42.6	42.5	42.8
Electrical and electronic equipment	40.3	40.7	41.0	40.9	40.6	40.9	41.2	40.9	41.0	41.2
Transportation equipment	41.9	42.0	42.6	43.0	41.9	41.4	42.3	42.1	42.3	43.0
Motor vehicles and equipment	42.3	42.4	43.1	44.0	42.1	41.4	42.4	42.6	42.8	43.8
Instruments and related products	40.8	41.3	41.7	41.5	41.0	41.3	41.9	41.3	41.4	41.8
Miscellaneous manufacturing	38.8	38.8	39.1	38.8	(2)	(2)	(2)	(2)	(2)	(2)
Nondurable goods	39.5	39.9	40.0	40.0	39.7	40.3	40.4	40.3	40.1	40.2
Overtime hours	3.1	3.4	3.4	3.4	3.3	3.7	3.8	3.6	3.5	3.6
Food and kindred products	39.3	39.7	39.5	39.7	39.8	40.6	40.8	40.4	40.0	40.2
Tobacco manufactures	37.6	38.7	39.8	38.1	(2)	(2)	(2)	(2)	(2)	(2)
Textile mill products	40.9	41.5	41.2	41.2	41.4	41.7	41.7	41.9	41.4	41.7
Apparel and other textile products	35.8	36.7	37.1	36.9	36.1	37.2	36.9	37.0	37.1	37.2
Paper and allied products	42.8	43.0	43.0	43.1	43.0	43.2	43.6	43.3	43.1	43.3
Printing and publishing	37.6	37.8	38.2	37.9	37.7	37.9	38.0	38.1	38.1	38.0
Chemicals and allied products	42.2	42.5	42.6	42.4	42.2	42.7	42.7	42.6	42.5	42.4
Petroleum and coal products	43.8	43.0	43.6	44.1	43.9	44.3	44.2	43.6	43.7	44.2
Rubber and miscellaneous plastics products	40.9	41.4	41.6	41.7	(2)	(2)	(2)	(2)	(2)	(2)
Leather and leather products	36.7	36.9	37.5	36.7	(2)	(2)	(2)	(2)	(2)	(2)
Transportation and public utilities	38.8	38.9	38.7	38.9	39.0	39.0	39.4	39.1	38.7	39.1
Wholesale trade	38.1	38.0	38.0	38.3	38.2	38.1	38.2	38.3	38.2	38.4
Retail trade	29.2	28.6	28.7	29.0	29.5	28.8	29.0	29.2	29.0	29.3
Finance, insurance, and real estate	36.3	36.4	35.8	36.2	(2)	(2)	(2)	(2)	(2)	(2)
Services	32.3	32.7	32.3	32.6	32.4	32.4	32.6	32.9	32.4	32.7

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[1] Data relate to production workers in mining and manufacturing; to construction workers in construction; and to nonsupervisory workers in transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. These groups account for approximately four-fifths of the total employees on private nonagricultural payrolls.

[2] This series is not published seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separated with sufficient precision.

p = preliminary.

Table B-3. Average hourly and weekly earnings of production or nonsupervisory workers[1] on private nonagricultural payrolls by industry

Industry	Average hourly earnings				Average weekly earnings			
	Apr. 1987	Feb. 1988	Mar. 1988 p	Apr. 1988 p	Apr. 1987	Feb. 1988	Mar. 1988 p	Apr. 1988 p
Total private	$8.91	$9.10	$9.19	$9.22	$308.29	$316.71	$317.06	$320.86
Seasonally adjusted	8.91	9.13	9.17	9.22	309.18	318.64	317.28	321.78
Mining	12.43	12.61	12.50	12.44	519.57	525.84	520.00	529.94
Construction	12.55	12.77	12.83	12.83	469.37	462.27	481.13	487.54
Manufacturing	9.87	10.06	10.07	10.12	398.75	409.44	412.87	414.92
Durable goods	10.39	10.60	10.61	10.66	427.03	437.78	441.38	444.52
Lumber and wood products	8.34	8.54	8.46	8.48	330.60	339.09	337.55	341.74
Furniture and fixtures	7.58	7.75	7.78	7.81	294.10	302.25	304.20	304.59
Stone, clay, and glass products	10.23	10.35	10.37	10.40	430.68	427.46	435.54	443.04
Primary metal industries	11.96	12.08	12.10	12.20	508.30	523.06	525.14	531.92
Blast furnaces and basic steel products	13.84	13.99	13.99	14.10	593.74	614.16	610.93	620.40
Fabricated metal products	9.98	10.18	10.19	10.27	408.10	420.43	422.89	428.26
Machinery, except electrical	10.70	10.88	10.89	10.96	445.12	462.40	465.00	466.90
Electrical and electronic equipment	9.82	10.04	10.05	10.10	395.75	408.63	412.05	413.09
Transportation equipment	12.80	13.18	13.20	13.26	536.32	553.56	562.32	570.18
Motor vehicles and equipment	13.40	13.88	13.94	14.07	566.82	588.51	600.81	619.08
Instruments and related products	9.67	9.95	9.87	9.85	394.54	410.94	411.58	408.78
Miscellaneous manufacturing	7.67	7.80	7.89	7.90	297.60	305.74	308.50	306.52
Nondurable goods	9.14	9.29	9.31	9.34	361.03	370.67	372.40	373.60
Food and kindred products	8.95	9.05	9.05	9.10	351.74	359.29	357.48	361.27
Tobacco manufactures	14.28	13.91	14.20	14.74	536.93	538.32	565.16	561.59
Textile mill products	7.12	7.31	7.33	7.36	291.21	303.37	302.00	303.23
Apparel and other textile products	5.94	6.03	6.05	6.06	212.65	221.30	224.46	223.61
Paper and allied products	11.37	11.49	11.50	11.57	486.64	494.07	494.50	498.67
Printing and publishing	10.14	10.41	10.44	10.40	381.26	393.50	398.81	394.16
Chemicals and allied products	12.38	12.55	12.55	12.52	519.06	533.38	534.63	530.85
Petroleum and coal products	14.50	14.91	14.92	15.10	635.10	641.13	650.51	665.91
Rubber and miscellaneous plastics products	8.82	8.97	8.97	9.00	360.74	371.36	373.15	375.30
Leather and leather products	6.12	6.14	6.19	6.27	224.60	226.57	232.13	238.11
Transportation and public utilities	11.94	12.18	12.12	12.09	463.27	473.80	469.04	470.30
Wholesale trade	9.53	9.80	9.78	9.88	363.09	372.40	371.64	378.40
Retail trade	6.09	6.24	6.25	6.27	177.83	178.46	179.38	181.83
Finance, insurance, and real estate	8.71	9.06	9.01	9.03	316.17	329.78	322.56	326.89
Services	8.40	8.79	8.79	8.81	271.32	287.43	283.92	287.21

[1] See footnote 1, table B-2.

p = preliminary.

Table B-4. Hourly Earnings Index for production or nonsupervisory workers[1] on private nonagricultural payrolls by industry

(1977 = 100)

Industry	Not seasonally adjusted					Seasonally adjusted						
	Apr. 1987	Feb. 1988	Mar. 1988p	Apr. 1988p	Percent change from: Apr. 1987- Apr. 1988	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988p	Apr. 1988p	Percent change from: Mar. 1988- Apr. 1988
Total private nonfarm:												
Current dollars	172.7	177.0	177.0	177.7	2.9	172.6	175.7	176.4	176.5	176.8	177.6	0.5
Constant (1977) dollars	94.3	94.0	93.6	N.A.	(2)	94.2	93.6	93.7	93.6	93.4	N.A.	(3)
Mining	181.3	184.4	183.5	183.4	1.2	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Construction	153.0	155.2	156.1	156.6	2.3	153.7	154.4	157.1	155.8	156.9	157.3	.3
Manufacturing	175.3	177.6	177.8	178.3	1.7	175.0	176.9	176.9	177.3	177.5	178.0	.3
Transportation and public utilities	174.8	178.5	177.6	177.3	1.4	175.2	177.4	176.9	177.8	177.8	177.7	-.1
Wholesale trade	175.9	180.5	180.3	182.2	3.6	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Retail trade	160.2	163.2	163.8	164.8	2.9	159.8	162.7	163.1	162.7	163.3	164.5	.7
Finance, insurance, and real estate	186.7	195.0	194.2	194.6	4.2	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Services	179.4	187.3	187.4	188.4	[illegible]	[illegible]	185.1	186.4	186.0	187.1	188.4	.7

1 See footnote 1, table B-2.
2 Change is -1.0 percent from March 1987 to March 1988, the latest month available.
3 Change is -.2 percent from February 1988 to March 1988, the latest month available.
4 These series are not seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separated with sufficient precision.
N.A. Data not available.
p = preliminary

Table B-5. Indexes of aggregate weekly hours of production or nonsupervisory workers[1] on private nonagricultural payrolls by industry

(1977 = 100)

Industry	Not seasonally adjusted				Seasonally adjusted					
	Apr. 1987	Feb. 1988	Mar. 1988 p	Apr. 1988 p	Apr. 1987	Dec. 1987	Jan. 1988	Feb. 1988	Mar. 1988 p	Apr. 1988 p
Total	118.1	119.7	120.5	122.8	119.6	121.8	122.4	123.7	123.1	124.3
Goods-producing	96.3	96.9	99.1	101.1	98.0	101.6	100.6	101.6	102.2	102.9
Mining	79.6	82.8	83.1	86.6	81.3	85.8	82.7	83.9	84.3	88.5
Construction	127.0	115.8	125.4	135.5	132.8	138.5	130.5	137.6	142.4	141.6
Manufacturing	91.2	94.0	94.8	95.2	92.1	95.2	95.6	95.5	95.3	96.1
Durable goods	89.2	91.7	92.8	93.5	89.6	92.6	93.0	92.9	92.8	93.9
Lumber and wood products	99.7	98.1	98.7	101.2	102.0	103.7	102.6	103.7	102.6	103.1
Furniture and fixtures	105.3	111.6	111.5	111.1	105.7	113.5	112.6	113.2	111.8	111.
Stone, clay, and glass products	86.0	81.3	84.5	88.2	86.3	88.7	86.7	87.7	88.1	88.5
Primary metal industries	62.8	66.7	67.5	67.8	62.1	67.1	66.6	66.6	66.6	67.1
Blast furnaces and basic steel products	50.6	54.8	55.0	55.5	49.6	55.1	54.8	54.9	54.6	54.4
Fabricated metal products	87.4	90.5	91.5	92.1	88.4	91.7	92.2	91.6	91.6	91.2
Machinery, except electrical	84.7	91.3	92.7	92.9	84.8	90.1	91.3	91.1	91.4	92.9
Electrical and electronic equipment	98.0	101.9	102.9	102.5	99.0	102.7	103.1	102.4	102.9	103.5
Transportation equipment	97.0	96.3	96.8	98.2	96.6	94.9	96.4	95.9	95.5	97.9
Motor vehicles and equipment	86.2	84.0	85.8	88.4	85.6	83.0	83.8	84.4	84.5	87.7
Instruments and related products	100.7	104.6	105.9	105.3	101.0	103.6	105.7	104.7	104.7	106.0
Miscellaneous manufacturing	79.4	80.9	82.3	82.8	79.9	82.0	82.8	83.9	83.1	83.5
Nondurable goods	94.2	97.3	97.7	97.6	95.7	99.2	99.6	99.4	99.0	99.3
Food and kindred products	93.2	95.9	95.1	95.1	99.3	101.4	103.2	102.4	101.1	101.5
Tobacco manufactures	69.2	75.1	72.6	65.0	77.3	78.5	78.9	77.7	75.6	72.8
Textile mill products	80.4	82.8	82.1	81.7	81.3	83.6	83.3	84.1	82.8	82.7
Apparel and other textile products	83.1	85.9	86.8	86.4	83.5	87.3	86.4	86.3	86.5	86.9
Paper and allied products	98.6	99.6	99.5	99.7	99.5	100.5	101.5	101.2	100.3	100.8
Printing and publishing	129.2	134.0	136.1	136.1	128.7	133.1	134.4	135.4	135.8	135.8
Chemicals and allied products	93.3	97.0	98.3	98.2	93.4	97.8	97.8	97.4	98.0	98.1
Petroleum and coal products	82.8	80.1	81.7	83.9	82.9	86.9	85.9	83.9	83.4	84.3
Rubber and miscellaneous plastics products	112.6	119.6	121.0	121.8	112.6	119.8	120.2	119.8	120.2	121.6
Leather and leather products	56.3	58.0	58.6	57.3	57.4	60.2	60.2	59.7	59.7	57.8
Service-producing	130.2	132.2	132.4	134.8	131.5	133.0	134.4	135.9	134.7	136.2
Transportation and public utilities	106.6	109.5	109.7	111.1	107.9	110.5	112.0	111.6	110.9	112.5
Wholesale trade	116.2	118.2	118.9	120.7	117.4	118.8	119.6	120.3	120.8	121.8
Retail trade	118.9	117.2	118.0	120.8	121.6	120.1	122.0	123.4	122.3	123.5
Finance, insurance, and real estate	141.1	141.8	139.5	142.0	142.0	141.1	143.1	143.2	141.1	143.1
Services	150.0	155.3	155.5	158.1	150.3	154.5	155.7	158.6	156.8	158.4

[1] See footnote 1, table B-2.

p = preliminary

Table B-6. Indexes of diffusion: Percent of industries in which employment[1] increased

Time span	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span	1986	53.2	48.1	48.1	51.5	52.4	46.8	52.4	56.2	55.1	53.2	59.7	59.7
	1987	53.5	56.8	58.6	58.4	58.6	55.7	68.6	54.6	65.4	65.4	71.9	63.2
	1988	60.0	62.7	p58.1	p56.5								
Over 3-month span	1986	49.7	44.9	45.7	48.4	47.6	45.4	48.4	55.1	55.9	58.1	58.6	60.3
	1987	58.6	59.5	61.1	61.6	61.4	67.3	66.2	75.1	69.7	77.8	75.9	70.5
	1988	67.0	p64.9	p61.4									
Over 6-month span	1986	47.6	47.6	43.0	43.2	45.4	48.4	47.3	53.0	59.2	58.9	57.8	58.9
	1987	61.9	62.7	58.9	67.3	67.6	71.1	76.2	78.6	80.3	75.7	76.8	p73.0
	1988	p70.3											
Over 12-month span	1986	43.2	44.1	46.2	45.7	47.9	49.5	49.5	51.6	54.9	52.2	55.1	56.5
	1987	62.2	63.5	67.3	68.9	73.8	72.4	74.2	77.0	p76.5	p77.6		
	1988												

[1] Number of employees, seasonally adjusted for 1, 3, and 6 month spans, on payrolls of 185 private nonagricultural industries. Data for the 12-month span are unadjusted.

p = preliminary

NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components are counted as rising.) Data are centered within the spans.

Senator **Sarbanes**. Thank you very much, Commissioner, for your statement.

First of all, a technical question. When you make reference to teenagers, in talking about the unemployment figures, what definition of teenager do you use?

Mrs. **Norwood**. Sixteen to nineteen.

Senator **Sarbanes**. And how do you treat teenagers who are students?

Mrs. **Norwood**. If they are working, they are employed. If they are looking for work and currently available for work they're counted among the unemployed. And if they're working part time, they are still counted among the employed, although we have separate counts of these working part time and those working full time.

Senator **Sarbanes**. Do you make a distinction between a teenager who's not in school and looking for a job and a teenager who is in school and also is looking for a job?

Mrs. **Norwood**. Yes. We do have that information and we publish it monthly.

Senator **Sarbanes**. I'm interested in the discrepancy between the household survey and the payroll survey which you make reference to.

You conclude by saying the two surveys so far for the year come out roughly about the same, even though there are very sharp differences between them on a month-to-month basis.

Mrs. **Norwood**. That's right.

Senator **Sarbanes**. Is that normal or do we need better surveys? Obviously, you regard it as desirable that they should say about the same thing over a period of time. It happened to work out that way, but beneath the surface they are saying very different things month to month; should that cause us some concern?

Mrs. **Norwood**. It was clear last month that the household survey which showed a whopping decline in the labor force and in employment was probably showing some erratic movement. As you recall, we felt, as we often see in the household survey this up and down movement, that it would over the next month or two correct itself. And I think that correction has occurred.

Is that a bad thing? I don't really know. The household survey after all is a sample survey and I think you cannot expect it to be absolutely smooth.

The payroll survey of businesses is much larger. It's comprised of several hundred thousand business establishments, and it tends to be a great deal smoother. The 175,000 gain this month is slightly less than the average that we've had in prior months of 250,000 to 300,000, but it is not really completely out of line with the trends. We did have in February a very large increase in that survey as well.

I think what all these things say is that it's unfortunate that we in this country tend to seize on the specific most recent piece of data that comes out and perhaps, if I may say so, the most unfortunate thing of all is that our financial markets seem to act on them almost instantaneously, the minute they are out. And that does trouble us.

Senator **Sarbanes**. What is the impact on the employment and unemployment figures of the amnesty period for illegal aliens and more recently the filing by more than 2 million people for legal status?

Mrs. **Norwood**. Well, that's a subject that has been a matter of great interest and speculation. There are those who have suggested that the payroll survey is much higher than it would otherwise be because the illegal aliens have now come forward and become legal and are therefore now on the payroll.

We looked into that and in discussions with the Immigration and Naturalization Service found that the largest proportion, something like three-fifths I think, of the illegals who came forward were in the State of California. We therefore spent a good deal of time analyzing the data and the microdata in the State of California.

The Immigration people also told us that many of the people who were coming forward had Social Security cards already. That doesn't necessarily mean they were on payrolls, but it's likely that most of them were.

In any case, we found in California that there was an increase in employment but it was not unusually large and certainly not large enough to explain the very large increases that we have had in the payroll survey. So, we don't think that the legalization program has had a big impact on our statistics.

Senator **Sarbanes**. In March, the Consumer Price Index rose a half a percent while the Producer Price Index rose six-tenths of a percent. This was in sharp contrast to previous behavior, and obviously that has caused some concern that the economy may be entering a period of rising inflation.

What were the causes, if you can identify them, of these increases in the CPI and the Producer Price Index in March?

Mrs. **Norwood**. Of course, one of the reasons for the increase in the CPI that certainly has been discussed a great deal was the very large increase in apparel, something like 2 percent. Apparel prices, however, have not been rising as much as many other commodities. It was also the spring and introduction perhaps of new lines, and also retail sales are not rising in that field very much. So it does not seem to us that apparel prices are something that is going to be a tremendously serious problem in the future.

We have seen some changes in energy prices which, of course, are always worrying. They are dependent to a large extent on decisions that are made outside of this country and so far at least it does not appear that these decisions are likely to produce enormous upward pressure in the future on energy prices, though, of course, that area always bears watching, particularly since there are activities going on in the gulf which could have an effect on it.

If you go to the Producer Price Index, you find I think some signs of upward movement of prices in intermediate materials and some of the important intermediate materials, and that certainly is the kind of price movement which could in the future find its way not only into the consumer sector but also into our export activity. I think that bears watching.

Now quite apart from all that, of course, we have seen very moderate rates of increase in wages—as you know, we've discussed that many times—and especially with the latest revisions of GNP figures and output figures, we're seeing a fairly substantial increase in productivity.

So I don't see, given the restraint in wages and the improved productivity figures, there appears still to be room and I don't see any real upward pressure that's going to result in immediate inflation.

I am concerned about the intermediate prices in the producer price area, however. I don't know whether Mr. Dalton might have something to add or not.

Mr. **Dalton**. I guess only to say that specifically the acceleration in both the CPI and the PPI in March are the result of increases in food and energy. As a matter of practice we like to look at those indexes excluding those components and if we look at the indexes excluding those components we see no acceleration in the Producer Price Index for finished goods. We do see an acceleration in that component of the Consumer Price Index, but as the Commissioner said, it is largely due to the sharp rise in apparel in March.

Mrs. **Norwood**. But an intermediate producer excluding energy there is an increase.

Mr. **Dalton**. Right. And those increases have been recorded—rather substantial increases recorded for more than 12 months now.

Senator **Sarbanes**. As I understood it, there's been a signficant increase in import prices. Is that correct?

Mrs. **Norwood**. Yes. That's correct.

Senator **Sarbanes**. And in fact an increase in import prices excluding fuels of about 9 percent. What products does that reflect? In other words, that would be a category other than food and energy that explains some of these price increases, would it not?

Mrs. **Norwood**. Yes, certainly. Some of the machinery, beverages, tobacco, some of the crude materials, chemicals, a lot of manufactured products.

Senator **Sarbanes**. When you compare import prices with prices of comparable domestic goods, do the data suggest that American producers have been foregoing price increases to recapture their markets, or have they been raising prices along with rising import prices? Do the data show us anything on that question?

Mrs. **Norwood**. In general, there has been some restraint in the past by American producers. There are some signs in the more recent Producer Price Index suggesting that some increases have taken place and there may be more in store. Is there more than that, Mr. Dalton?

Mr. **Dalton**. No, I don't think so. I think there's sort of anecdotal kinds of information about the price competitiveness of U.S. manufacturing vis-a-vis imports, but we don't have any information to say anything definitive on that.

Mrs. **Norwood**. It is clear, from many of the economists from exporting companies with whom I have talked, that they have been intent on trying to hold the price line so as to begin to recapture their markets. In some cases now they are beginning to reach capacity and are planning price increases partly as a result of that. The big question is whether they will begin to do more capital investment to develop more capacity since they have reduced a lot of plants.

In some instances, what we've done is taken out of production inefficient plants so that the capacity we have is working, I believe, much more efficiently than it was some years ago. But in some areas, like pulp and chemicals, there are some questions about whether they need to begin building new capacity.

Senator **Sarbanes**. Isn't it accurate to say that real compensation per hour has essentially been on a plateau or stagnant over the last few years?

Mrs. **Norwood**. I believe that that is generally true. We have seen some movement—that is, it has been rising very slowly, if you look at the employment cost index in real terms. But what we have been seeing really is an increase in employer costs for some of the benefits, particularly health care. And, of course, we had a Social Security tax increase and that would be a part of the compensation cost.

But the wage and salary portions have been quite restrained and, indeed, our productivity data are showing in manufacturing a reduction in unit labor costs.

Senator **Sarbanes**. But real compensation includes fringes, doesn't it?

Mrs. **Norwood**. Yes.

Senator **Sarbanes**. So to the extent the employer was shifting from wages to health, the fact remains that that total package has been stagnating.

Mrs. **Norwood**. Yes, except that I think that in the health insurance field what we're seeing is increased costs for everybody's health insurance, including the employer's portion of those costs.

Senator **Sarbanes**. I know. But if you use a real figure you're adjusting for that.

Mrs. **Norwood**. It's more than that.

Senator **Sarbanes**. In our annual report—I don't know whether you can see it from there, but this graph shows real compensation per hour. Of course, what we had was a steady rise into the early 1970's but in the 1980's the thing has literally plateaued out, so that earnings in effect have stagnated. Isn't that correct? The real compensation per hour has stagnated. People have managed in some instances to increase their income by having two family members working rather than one. We get constant assertions that average family income has gone up, but that obviously would be the case if more members of the family were working, would it not?

Mrs. **Norwood**. Yes. Certainly per capita income has gone up and over this decade there has been a flatness certainly in compensation. For a while the employer cost of fringes went up and there were, as you know, in a number of areas, there were givebacks, and so there was a decline and then it has gone up a bit. But over the whole period, it is relatively flat. That's quite correct.

Senator **Sarbanes**. Also, I'm interested in the fact that the lines between compensation per hour and output per hour have separated in the 1980's in a way that was not the case in the earlier postwar period. In other words, again, I don't know whether you can see this graph, but earlier these two iines trended together, and now output per hour continues to go up while compensation per hour essentially has plateaued. So we have a growing gap between output per hour and compensation per hour. Do you have any explanation for that?

Mrs. **Norwood**. Well, one of the things that we are doing is reducing costs and labor cost is a very important part of total cost, and there has been quite a turnaround. I think there are a lot of reasons for it. Part of it is, of course, that inflation has decelerated so there is less push for increased earnings. The trade union movement is a smaller proportion of the work force. And they are concerned in many of the manufacturing industries so much with job security as with increased earnings, so that collective bargaining is focusing in different ways. And that's part of the whole issue of competitiveness and how we are trying to improve our competitiveness. And some of it comes from wage restraint.

Senator **Sarbanes**. One of the consequences is that labor's share of personal income has declined markedly and property share of personal income has increased substantially. So one of the consequences of this development is the shift of personal income away from labor and toward property.

Mrs. **Norwood**. There's also some question about whether there is greater inequality between the top and the bottom. There's only anecdotal information, but even in some of the major collective bargaining negotiations the fringe benefits that the very top executives get are going in a very different direction from the earnings of the workers themselves, even though there is a good deal more profit sharing.

Senator **Sarbanes**. Well, we're getting anecdotal reports—and I wonder if you have any figures on this—of an increasing number of employers who work their people close to full time but just short of what is required to pay them the fringe benefit package. In other words, there are employers who first say that a worker has to be full time, 40 hours a week, to participate in the fringe benefit package—health insurance and all the rest of it—and then structure their employment so that they have a lot of people who work, say, 35 hours a week but are not qualified for the fringe benefit package. Are there any data on that issue?

Mrs. **Norwood**. We really don't have a lot of information on that. We have just done a survey of the temporary help industry—that is, the companies that provide help to other establishments, to find out what proportion of their workers are covered by them by health insurance and other kinds of benefits and we should have that information within the next few weeks.

Beyond that, it's rather hard to say. Thirty-five hours usually is considered sufficient for fringe benefits. I would think they would have to cut below that level, but I really don't know.

Mr. **Plewes**. The usual threshold by practice and sometimes by law is about 20 hours. We have looked to see whether or not the increase in part time is above 20 hours or below 20 hours and there is some increase in the below 20 hours, even on the voluntary side. So there is some evidence that that is happening, but again, it is not happening in tremendous number. It is not an overwhelming kind of a trend that we're looking at.

Senator **Sarbanes**. I understand that. Obviously if you want to hire somebody 10 hours a week you may not even hire that person at all if you have to offer a full fringe benefit package. So we then have some question about employment.

I'm concerned about people who are working 30, 35, 38 hours weekly. I've even heard of one firm where the requirement for fringe benefits was 40 hours and everyone was hired at 38—not everyone, but a fair part of the work force, simply to avoid paying the fringe benefit package.

Mrs. NORWOOD. We don't have any data of that kind. We don't see that in our data, but we really don't have the information. As I said, we're trying to find out more about the providers of temporary workers to see—because that's a large and was a fast-growing group—to see how much they provide fringe benefits and we should have those data within a week or two. We have some information in the current population survey but not very detailed.

Senator SARBANES. In your report you separated employment for men and employment for women and you talked about some of the work category. Is there any breakdown in the job distinctions between men and women, I mean the assumption that certain jobs are for men and other jobs are for women? Is that distinction breaking down, or does it continue to remain fairly hard and fast?

Mrs. NORWOOD. It is breaking down, but rather slowly.

Senator SARBANES. The Commissioner of Labor Statistics used to be sort of a man's job.

Mrs. NORWOOD. That's right.

Senator SARBANES. And we broke that one down. But how much of that is going on?

Mrs. NORWOOD. There is some of it. We're seeing women bus drivers and we're seeing women bartenders and so on.

Senator SARBANES. Male nurses? Not so much?

Mrs. NORWOOD. Yes, but we're seeing more male physicians' attendants because that pays a little bit more and the men tend to move into jobs that are somewhat higher paying.

What we are seeing is that if you look at some of the newer occupations, like computer programmers and other kinds of computer jobs, women are doing better comparatively than in some other occupations. And their wages are somewhat closer to parity with men's, though not completely so.

Women, nevertheless, still are most of the country's secretaries and typists. They are most of the librarians. They're most of the nurses. They are employed in very large numbers in the service-producing industries, retail trade in particular, partly because that's where the job expansion was when the women came into the labor market.

Senator SARBANES. Do you have figures on how many people hold two jobs?

Mrs. NORWOOD. Yes, and lots of women do. They hold two part-time jobs. The rate of increase in dual-job holding for women was surprisingly large. We did that survey as a supplement to the current population survey. I can supply the specific figures for the record.

[The following information was subsequently supplied for the record:]

Moonlighting by women jumped to record highs

An important, but small, proportion of Americans work at two jobs or more; they do so principally for financial reasons such as meeting regular expenses or paying off debts and also to explore new careers while still holding on to their primary jobs

John F. Stinson, Jr.

According to a survey conducted in May 1985, multiple jobholders totaled 5.7 million, 5.4 percent of all employed workers. This was up from 4.9 percent in 1980 and was the highest level in more than 20 years. Data from the same survey confirm the continuance of two long-term trends: an increasing number of women among the moonlighters and a decline in the proportion of multiple jobholders with at least one job in agriculture.

These findings are from a special survey of work patterns of American workers.[1] Multiple jobholders, as identified in this survey, are those employed persons who, during the survey reference week, either (1) had jobs as wage or salary workers with two employers or more; (2) were self-employed and also held a wage and salary job; or (3) were unpaid family workers on their primary jobs but also held wage and salary jobs.[2] The primary job is the one at which the greatest number of hours were worked.

Demographic characteristics

The survey revealed that between 1980 and 1985, the number of women with two jobs or more rose by almost 40 percent to 2.2 million. Over the same period, the multiple jobholding or "moonlighting" rate for women (percent of employed with more than one job) jumped from 3.8 to 4.7 percent. In 1985, women made up nearly two-fifths of all moonlighters.

Moonlighting among women has actually been rising steadily since 1970, paralleling their continued increase in overall labor force participation. Over the decade and a half, the number of women holding at least two jobs has more than tripled and their moonlighting rate has risen from 2.2 to 4.7 percent. (See table 1.)

The moonlighting rate for men, which had undergone a long-term decline before stabilizing during the 1970's at around 6 percent, continued to hold steady at 5.9 percent in May 1985. While men are still more likely than women to be working at two jobs or more, the gender difference in the incidence of multiple jobholding has been sharply reduced over time. As recently as 1970, the moonlighting rate for men exceeded that for women by 5 percentage points; by 1975, the gap had shrunk to 3 percentage points; by 1980, it had declined to 2 points; and, as shown above, by 1985, it barely exceeded 1 point.

Significant differences still persist, however, in the types of jobs held by the men and women who moonlight. In 1985, about 40 percent of the women were working at multiple part-time jobs, while more than four-fifths of the male moonlighters usually worked full time at their primary jobs and part time on their secondary jobs.

Among men, the proportion holding more than one job increases progressively in each age group, reaching a peak of 7.1 percent in the 35 to 44 years interval and declining

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steadily thereafter. Among women the pattern was much different. The proportion holding multiple jobs was 5 percent in all age groups below 45 years and then dropped off progressively. (See table 2.)

While married men were more apt to moonlight than either single men or those who were widowed, divorced, or separated, married women were somewhat less likely to work at more than one job than were those without a spouse.

Whites continued to be much more likely than blacks to work at two jobs or more. In fact, the moonlighting rate for whites increased from 5.1 to 5.7 percent between 1980 and 1985, while the black rate was unchanged at 3.2 percent. The increase for whites was principally among women, whose moonlighting rate rose a full percentage point to 4.9 percent; the rate for white men edged up slightly to 6.2 percent. Hispanic women had a moonlighting rate of 2.8 percent, about the same as that for black women, while the rate for Hispanic men was below that of blacks and only half the rate of white men.

Reasons for working at more than one job

Economic factors predominate among the reasons for moonlighting. About 41 percent of persons working more than one job in May 1985 reported that they did so in order to meet regular expenses or pay off debts, and 13 percent cited a desire to save for the future. Another 17 percent indicated that their principal reason for moonlighting was to get experience or build up a business, while 29 percent reported various other reasons. Women were slightly more likely than men to indicate the desire to get experience in a different field of work. (See table 3.)

Marital status had a clear effect on the reasons reported for moonlighting. Single men and women were more likely than other groups to moonlight in order to accumulate savings for the future. Current financial considerations played a much more important role in the decision to moonlight for widowed, divorced, and separated workers. More than two-thirds of the women and almost half of the men in that category cited either the need to meet regular expenses or to pay off debts as their reason for working at more than one job.

There was also a sharp divergence in the distribution of the reasons for multiple jobholding reported by blacks and whites. Blacks of both sexes were much more likely than whites to say they moonlighted in order to help with regular expenses and paying off debts and much less likely to say they did so to get experience or to build up a business.

Class of worker, industry, and occupation

The proportion of multiple jobholders engaged in farming in either their primary or secondary job—a prominent activity among dual jobholders in the past—declined to fewer than one-tenth in May 1985. In most cases, these workers had primary jobs as wage and salary workers in nonagricultural industries but did some farming on their own. (See table 4.) While the proportion of such workers had been edging down as shown in the following tabulation, the drop between 1980 and 1985 was particularly sharp, undoubtedly reflecting the myriad problems encountered by the farm sector in recent years:

	Total multiple jobholders (thousands)	*With at least one job in agriculture*	
		Total (thousands)	*Proportion*
1970	4,048	943	23.3
1975	3,918	890	22.7
1977	4,558	922	20.2
1979	4,724	871	18.4
1980	4,759	835	17.5
1985	5,730	532	9.3

Table 1. Employed persons 16 years and over holding two jobs or more and multiple jobholding rates by selected characteristics, May 1970 to May 1985

[Numbers in thousands]

Year	Total employed	Multiple jobholders				Multiple jobholding rate[1]				
		Total	Men	Women		Total	Men	Women	White	Black[2]
				Number	Percent of all multiple jobholders					
1970	78,358	4,048	3,412	636	15.7	5.2	7.0	2.2	5.3	4.4
1971	78,708	4,035	3,270	765	19.0	5.1	6.7	2.6	5.3	3.8
1972	81,224	3,770	3,035	735	19.5	4.6	6.0	2.4	4.8	3.7
1973	83,758	4,262	3,393	869	20.3	5.1	6.6	2.7	5.1	4.7
1974	85,786	3,889	3,022	867	22.3	4.5	5.8	2.6	4.6	3.8
1975	84,146	3,918	2,962	956	24.4	4.7	5.8	2.9	4.8	3.7
1976	87,278	3,948	3,037	911	23.1	4.5	5.8	2.6	4.7	2.8
1977	90,482	4,558	3,317	1,241	27.2	5.0	6.2	3.4	5.3	2.6
1978	93,904	4,493	3,212	1,281	28.5	4.8	5.8	3.3	5.0	3.1
1979	96,327	4,724	3,317	1,407	29.8	4.9	5.9	3.5	5.1	3.0
1980	96,809	4,759	3,210	1,549	32.5	4.9	5.8	3.8	5.1	3.2
1985	106,878	5,730	3,537	2,192	38.3	5.4	5.9	4.7	5.7	3.2

[1] Multiple jobholders as a percent of all employed persons.

[2] Beginning in 1977, data refer to black workers only; data for prior years refer to the black-and-other-population group.

NOTE: Data for 1970–1980 have not been adjusted to reflect 1980 census population controls.

Table 2. Employed persons with two jobs or more by age, marital status, race, and Hispanic origin, May 1985
[Numbers in thousands]

Characteristic	Total: Total employed	Total: Multiple jobholders: Number	Total: Multiple jobholders: Percent	Men: Total employed	Men: Multiple jobholders: Number	Men: Multiple jobholders: Percent	Women: Total employed	Women: Multiple jobholders: Number	Women: Multiple jobholders: Percent
Age									
Total, 16 years and over	106,878	5,730	5.4	60,015	3,537	5.9	46,864	2,192	4.7
16 to 19	6,289	289	4.6	3,370	134	4.0	2,919	156	5.3
20 to 24	13,857	777	5.6	7,345	436	5.9	6,512	340	5.2
25 to 34	31,246	1,771	5.7	17,641	1,090	6.2	13,605	682	5.0
35 to 44	24,446	1,522	6.2	13,968	967	7.1	10,478	556	5.2
45 to 54	16,682	847	5.1	9,526	568	5.9	7,156	280	4.1
55 to 64	11,545	433	3.8	6,739	294	4.4	4,806	139	2.9
65 and over	2,813	90	3.2	1,696	59	3.5	1,117	31	2.7
Marital status									
Single	26,167	1,448	5.5	14,788	767	5.2	11,380	681	6.0
Married, spouse present	65,443	3,448	5.3	39,444	2,447	6.2	25,999	1,001	3.8
Widowed, divorced, or separated	15,268	834	5.5	5,803	323	5.6	9,465	510	5.4
Race and Hispanic origin									
White	93,555	5,286	5.7	53,222	3,291	6.2	40,333	1,995	4.9
Black	10,416	338	3.2	5,240	187	3.6	5,176	151	2.9
Hispanic origin	6,489	194	3.0	3,984	125	3.1	2,505	69	2.8

NOTE: Detail for race and Hispanic-origin groups will not add to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

Table 3. Multiple jobholders by sex, marital status, race and the reason for working at more than one job, May 1985

Characteristic	Total (thousands)	Percent distribution by reason: Total	To meet regular household expenses	To pay off debts	To save for the future	To get experience or build up a business	Other reason
Total, 16 years and over	5,730	100.0	31.6	9.3	13.0	17.0	29.2
Men, 16 years and over	3,537	100.0	30.3	9.0	12.9	18.1	29.7
Single	767	100.0	20.7	10.4	21.5	19.5	27.9
Married, spouse present	2,447	100.0	33.4	7.6	11.0	18.0	30.1
Widowed, divorced, or separated	323	100.0	29.2	17.0	7.2	15.4	31.1
White	3,291	100.0	29.4	9.1	12.8	18.4	30.3
Black	187	100.0	45.6	10.6	12.8	11.1	20.0
Women, 16 years and over	2,192	100.0	33.7	9.7	13.1	15.3	28.2
Single	681	100.0	28.5	8.7	22.1	14.1	26.6
Married, spouse present	1,001	100.0	27.2	7.8	10.6	20.1	34.2
Widowed, divorced, or separated	510	100.0	53.5	14.8	6.0	7.0	18.8
White	1,995	100.0	33.3	8.9	12.9	15.7	29.2
Black	151	100.0	40.1	19.7	16.3	5.4	18.4

Table 4. Multiple jobholders by industry and class of worker of primary and second job, May 1985
[Numbers in thousands]

Primary job	Total employed	Multiple jobholders: Number	Multiple jobholders: As a percent of total employed	Second job in agriculture: Total	Second job in agriculture: Wage and salary job	Second job in agriculture: Self-employed	Second job in nonagricultural industries: Total	Second job in nonagricultural industries: Wage and salary job	Second job in nonagricultural industries: Self-employed
Total, 16 years and over	106,878	5,730	5.4	382	81	300	5,348	3,866	1,482
Agriculture	3,524	186	5.3	36	13	22	150	137	13
Wage and salary workers	1,731	103	6.0	32	10	21	71	58	13
Self-employed workers	1,582	74	4.7	3	3	(1)	71	71	(1)
Unpaid family workers	211	8	4.0	–	–	(2)	8	8	(2)
Nonagricultural industries	103,354	5,544	5.4	346	67	279	5,198	3,728	1,469
Wage and salary workers	95,379	5,266	5.5	342	64	278	4,924	3,455	1,469
Self-employed workers	7,694	289	3.5	3	3	(1)	286	286	(1)
Unpaid family workers	280	9	3.2	–	–	(2)	9	9	(2)

[1] Self-employed persons with a secondary business or farm, but no wage and salary job, are not counted as multiple jobholders.

[2] Persons whose primary job was as an unpaid family worker are counted as multiple jobholders only if they also had a wage and salary job.

Among the other multiple jobholders—that is, the vast majority who did not engage in any agricultural work—about one-third were self-employed in at least one job, usually the second job. The rest worked as wage and salary employees in both jobs.

The workers whose primary jobs were in industries such as entertainment and recreation services; professional services, especially educational services; and public administration were the most likely to engage in moonlighting. In terms of specific occupations, the men most likely to moonlight were those employed as teachers, both at and below the college level, or as health technologists and technicians. Between 16 and 19 percent of them held a second job. A high proportion of dual jobholders (13.9 percent) was also found among male protective service workers, a group which includes police, who frequently moonlight as guards and security personnel. There were no occupations for women with such high rates of multiple jobholding. The highest rates for women were among officials and administrators in public administration, with a moonlighting rate of 7.5 percent, and health diagnosing occupations; teachers at all levels; and engineering and science technicians, all with rates around 7 percent.

Hours of work and earnings

Multiple jobholders usually worked an average of about 14 hours per week on their secondary jobs. Almost two-thirds worked less than 16 hours, while about 15 percent reported 25 hours or more of moonlighting work. Although blacks are much less likely than whites to hold more than one job, about 20 percent of black moonlighters reported usually working more than 25 hours per week at their second job, compared with about 15 percent of whites.

Combining all jobs, moonlighters worked an average of 51 hours per week in May 1985. The average for men, at 55 hours per week, exceeded by 10 hours that usually worked by women with two jobs or more.

The median usual weekly earnings from all jobs of multiple jobholders (who were wage and salary workers on their primary job)[4] was $343 in May 1985. For women who moonlighted, total weekly earnings from all jobs ($241) were equal to little more than half of the earnings of multiple-jobholding men ($450). The total weekly earnings for black multiple jobholders were $305, slightly below the $344 average for whites.

Looking only at the second jobs, the earnings reported by multiple jobholders yielded a median of $70 in May 1985. Just over three-fifths of the moonlighters reported earnings of below $100 per week for their second job; one-fourth reported between $100 and $200; and about 13 percent reported earnings of over $200 per week. As was generally the case with regard to the principal job, men earned considerably more on the second job—$85 per week—than did women—$57 per week. Three quarters of the women reported weekly earnings of less than $100 on their second job, compared with a little more than half of the men.

Consistent with their greater hours worked, blacks reported earning more on their second jobs than did white moonlighters; the medians for the two groups were, respectively, $81 and $69 per week. Because black workers tend to earn much less in their primary jobs than do white workers, the earnings from secondary jobs help to narrow the income gap between whites and blacks who engage in multiple jobholding. ☐

——FOOTNOTES——

[1] The data were obtained through special questions asked in conjunction with the May 1985 Current Population Survey (CPS), the monthly survey of about 59,500 households which provides the basic labor force and unemployment data for the Nation. Data on multiple jobholders used to be collected each May in a supplement to the CPS until the supplement was ended after 1980. For the most recently published report on multiple jobholders, see Daniel E. Taylor and Edward S. Sekscenski, "Workers on long schedules, single and multiple jobholders," *Monthly Labor Review*, May 1982, pp. 47–53.

[2] Also included as multiple jobholders are a small number of persons who had two jobs because they changed jobs during the survey week. Persons employed only in private households (such as housekeepers, launderers, gardeners, babysitters, and so forth) who worked for two employers or more during the survey week, are not counted as multiple jobholders because working for several employers is considered an inherent characteristic of private household work rather than an indication of multiple jobholding. Also excluded are self-employed persons with additional farms or businesses and persons with secondary jobs as unpaid family workers.

[3] Included among the wage and salary workers are the incorporated self-employed (individuals who worked for corporations which they owned). The number of dual jobholders in this category is very small (58,000, or 1 percent of all moonlighters) and their inclusion among the wage and salary workers should have a minimal impact on the analysis of the data.

[4] Data on wage and salary earnings only were collected for the primary job. Data on earnings from all sources were collected for the second job.

Senator **Sarbanes**. And would that be the women who are head of households?

Mrs. **Norwood**. Not necessarily. Most people work because they need the money.

Senator **Sarbanes**. The fact of the matter is that if real compensation per hour stagnates, the only ways to increase your income in real terms is to take another job, or work longer hours in your existing job, or put another member of your family to work. Isn't that correct?

Mrs. **Norwood**. Yes, or work longer hours.

Senator **Sarbanes**. Isn't this stagnation in real compensation per hour one of the most significant things that's happened in the last decade? Through most of the postwar period you could have your job, work at it regularly, improve productivity, and your earnings would rise—your real position would improve year to year. That's no longer the case. You can be working, productivity may even go up as it has, but the trend line for your real compensation is not keeping pace.

So you work year to year, your productivity performance is better, but your real position doesn't improve. It seems to me this is one of the most marked changes that has taken place in the income position of working people in the postwar period.

Mrs. **Norwood**. I think that's true. There are a lot of reasons for it and much of it we don't fully understand. One of the things that has to be factored in in some way to that situation is the changing age profile of the work force. In the 1970's, we had large numbers of the babyboom generation coming into the labor force and in the 1980's we have begun to have a slowdown in the teenagers coming into the labor force, but what we are seeing is clearly a larger supply of people for entry level jobs just because they're younger, quite apart from anything else and quite apart from economic conditions.

I don't know how much of an effect that has, but it certainly has some. In addition, we have what some have begun to call the development of an underclass of people who are just not able to cope and therefore have very low incomes when they do work. They have limited training or no training and there are a lot of other problems, including discrimination.

So most of the studies that I have seen agree that there has been stability in family income over the last several decades and that the causes for that are not fully clear. It's a major policy issue for the future, there's no doubt about that.

Senator **Sarbanes**. Let me just read from the annual report of the Joint Economic Committee which, since we just issued it, is very fresh in our minds. "A number of observers have suggested that the entry of large numbers of young workers during the 1970's has played an important role in holding down the rate of growth in compensation since very large numbers of similarly skilled workers entering the labor market at the same time create both a productivity problem—younger less-skilled workers have lower productivity—and a crowding problem—more competition for jobs creates more downward pressure on wages. This demographic change does not explain faltering wage and income growth during the 1980's since the young workers of the 1970's are older, more experienced and entering their prime earnings years and new labor force entrants are fewer in number." In fact, I think they've dropped by about a million, haven't they, from 3 to 2 million, as I recall?

Mrs. **Norwood**. Yes.

Senator **Sarbanes**. "If the 1970's labor market entrants received lower incomes because they were young and less productive, we should expect to see substantial gains in both earnings and productivity as they mature. No such pattern has yet been noted."

So I understand the explanation, but it seems to me enough time has passed so that that factor should have shifted.

Mrs. **Norwood**. I think we're both right in many ways—we say that as the babyboom generation reaches the mature working age we're going to have improved productivity and things are going to be much better. But we have to remember that some members of that babyboom generation are reaching their prime working age years without ever having a successful labor market experience and they are not suddenly going to become highly productive members of the work force, as though they had the experience that people in the past have had.

You're quite right that the demographics have changed in the 1980's. There's no doubt about that. What I was really trying to say is that I believe that the influx of young babyboomers is still having some effect. I don't know quite how much. And I think it is this group that has really been left behind, but I think that most of the studies that I've seen have really suggested that we don't really know all of the reasons. If we did, we would know exactly what to do about it.

Senator **Sarbanes**. Well, let me ask this question. Do you think there's a deficiency in our data, in the degree of detail, that should be remedied to help us identify some of these specific problems in order to make better policy? I was struck in the symposium we had on the Swedish economy, by the degree of information available to Swedish policymakers. Of course, it's a much smaller economy. Sweden is a nation of 8 million people, so while you may not be able to track people individually, nonetheless it's much easier to track them. Are the nature of our labor force problems today such that we really need to think much more in terms of getting more specific detailed data in order to identify problems in order to make policy, or do you think that's not a pressing issue?

Mrs. **Norwood**. I have felt for some time that we need to know more about the people who are really having difficulties in the labor market. We can tell you how many of them there are, but we know very little about them. I think that was one of the reasons that the survey of income and program participation was started and some information is becoming available from the data base. But I would like to know a lot more about the people who have dropped out of the labor force and not returned, about the people who are working but having great difficulties—perhaps not working full time the year round, or working at very low wages.

We do have a program, as you know, to develop information on people who are affected when plants close down. One part of that that would be rather interesting is to find out what happens to those people once they have used up their unemployment insurance benefits. Once someone falls out of the UI system, as we have discussed before many times, the unemployment insurance system does not cover everyone——

Senator **Sarbanes**. It's down now to about one-third?

Mrs. **Norwood**. Yes, about that.

Senator **Sarbanes**. It used to be two-thirds.

Mrs. **Norwood**. That's correct. In the 1970's it was. It's now 34.9 percent.

But it would be rather useful to find out what happens to people who have exhausted the benefits. There is a lot that we don't know and we have tried our best through supplements to the current population survey to try to get that information. As I say, the plant closing-mass layoff survey may be developing more information. That's a new survey and more data from it will come on line more fully in the future.

We also have been trying to develop a capability to do things more quickly. One of the big problems, in my view, with the statistical system is that you can do something but it takes forever. By the time you get the information, the interest in the information is gone. So we at BLS have been attempting to develop a quick turnaround capability, using some new technology to go out to business establishments and get better information. I think that's something that also ought to be developed further.

The other issue, of course, is whether people understand the questions you're asking them. We are attempting very slowly I believe to move forward in developing cognitive research and we do have plans for the future that will provide for a redesign of the questionnaire that we use in the current population survey. That will take some time to do.

I might say about the Swedes that they have a very large body of data mainly because they have very comprehensive administrative data that they can use. Even if we had the same data in this country, we could not make use of them because there would be concern about how much we might know about individuals.

Senator **Sarbanes**. On the question of persons holding two jobs, do you have figures on those who have a full-time job plus a part-time job as opposed to people holding two part-time jobs?

Mr. **Plewes**. Yes, we do.

Senator **Sarbanes**. What does that show, do you know? Do you have that with you?

Mr. **Plewes**. I'll provide that for the record. I did not bring those data with me. I'm sorry. That was from our November 1986 Monthly Labor Review.[1]

Senator **Sarbanes**. Do you have any sort of rough idea of how it breaks out?

Mr. **Plewes**. I don't want to venture a guess here, sir.

Senator **Sarbanes**. It's my perception that the old pattern of work as a means to a rising standard of living—namely, someone had a job and tried to be productive at that job and if that were the case the standard of living would improve from year to year—seems to have broken down over the last decade because the real compensation per hour has flattened out. Productivity continues to go up, which obviously results in a diminishing labor share of personal income, but to get an improvement in the standard of living, either you have to take on another job, or work longer hours at the existing job, or another family member has to go to work.

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[1] See article entitled "Moonlighting by Women Jumped to Record Highs," beginning on p. 33.

That's a pretty accurate statement of the situation, isn't it?

Mrs. **NORWOOD**. I think there are also some shifts in methods of payment that are still fairly small and therefore may not be fully applicable to the situation that you describe. But there is beginning to be more of a view of something that I suppose employers call risksharing, which seems to mean that in some major bargaining agreements and in other places we're seeing wage restraint with special bonus payments either for productivity or in the form of 401(k) plan provisions—that is, the employer will pay into those plans—or stock options even for blue collar workers.

That's still fairly small and, unfortunately, many of those data are escaping the system. We're doing a complete review now of our whole compensation concepts to try to figure out what to do about much of this. I'm not sure that it's a very easy problem. I know it's not, but it seems to me it's something we have to keep on top of.

Senator **SARBANES**. Well, Commissioner, we thank you and your associates very much.

The committee is adjourned.

[Whereupon, at 10:40 a.m., the committee adjourned, subject to the call of the Chair.]

EMPLOYMENT-UNEMPLOYMENT

FRIDAY, JUNE 3, 1988

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, DC.

The committee met, pursuant to notice, at 9:30 a.m., in room 2359, Rayburn House Office Building, Hon. Lee H. Hamilton (vice chairman of the committee) presiding.

Present: Representatives Hamilton, Solarz, and Snowe.

Also present: William Buechner, Chris Frenze, and Jim Klumpner, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE HAMILTON, VICE CHAIRMAN

Representative HAMILTON. The Joint Economic Committee will come to order. The committee is pleased to welcome again Commissioner Janet Norwood of the Bureau of Labor Statistics this morning to testify on the employment and unemployment situation in May.

Your report for May indicates that the strong job growth of the past year is slowing considerably and may be coming to an end. The household survey reported a drop in employment in May of over half a million jobs and an increase in unemployment of 173,000.

At the same time, the payroll survey reported an employment increase in May of just over 200,000 jobs, which is somewhat less than the pace of job creation during the past year.

The civilian unemployment rate rose to 5.6 percent and is now back to its March level. The unemployment rate rose for every major segment of the labor force except teenagers and Hispanics, with the largest increase of 0.3 percentage points occurring for adult men.

In the payroll survey, job growth in manufacturing has slowed considerably, with only 16,000 new manufacturing jobs being created in May, about half the pace of the past year. Job growth in the service-producing industries was also somewhat slower than during the past year, with 201,000 new jobs created.

Although the gain in new jobs in May was not very strong, it should be noted that your annual revision of the payroll data, which occurs every May, has raised the number of jobs in the American economy by over 400,000 over the number you had previously reported.

The committee will now turn to Commissioner Norwood for her analysis of the employment and unemployment situation in May. We are pleased to have you with us.

STATEMENT OF HON. JANET L. NORWOOD, COMMISSIONER, BUREAU OF LABOR STATISTICS, DEPARTMENT OF LABOR, ACCOMPANIED BY THOMAS J. PLEWES, ASSOCIATE COMMISSIONER, OFFICE OF EMPLOYMENT AND UNEMPLOYMENT STATISTICS; AND KENNETH V. DALTON, ASSOCIATE COMMISSIONER, OFFICE OF PRICES AND LIVING CONDITIONS

Mrs. NORWOOD. Thank you very much, Mr. Vice Chairman. I have with me Kenneth Dalton, our price expert, and Tom Plewes, our employment-unemployment expert.

We are all very pleased once again to have the opportunity to present a few comments on our press release this morning.

Payroll employment rose by 210,000 in May, after seasonal adjustment, a somewhat slower pace of increase than the monthly gains we have seen over the past year. Both the total unemployment rate, at 5.5 percent, and the civilian worker rate, at 5.6 percent, were back at their March levels. These rates are a little below those at the beginning of the year and are seven-tenths of a percentage point below those of a year earlier.

Almost all of the payroll job increase from April to May took place in the service-producing sector. In the services industry itself, employment rose by 80,000, somewhat below the average monthly gain in this industry over the last year. Job growth in business services, which had been responsible for one in every eight new jobs during the current expansion, has slowed to an average of only about 15,000 in each of the last 3 months.

Health services, on the other hand, continued to grow quite rapidly, adding 35,000 jobs in May. Indeed, more jobs have been created in the health services industry over the last year than in any previous year. And our BLS projections suggest that several of the health industries will be among the 10 fastest growing employment industries during the next decade.

Elsewhere in the service sector, wholesale trade continued its recent pace of rapid growth by adding 25,000 jobs from April to May, while finance, insurance, and real estate lost 10,000. Retail trade payrolls showed fairly restrained growth in both April and May, following rapid gains at the beginning of the year.

In the goods-producing sector, employment changed very little from April to May. After experiencing fairly strong job growth in April, employment in manufacturing showed no real change in May. In fact, the generally lackluster May performance was similar to that of the first quarter of the year.

The machinery and fabricated metals industries both showed small gains over the month. These two export-influenced industries have paced the gains in manufacturing over the past year, along with electrical equipment, printing and publishing, chemicals, and rubber and plastics products.

As is our usual practice at this time of the year, the payroll data have been revised to reflect the incorporation of benchmark revisions and new seasonal adjustment factors. The revised data show somewhat more payroll employment growth than had previously been reported.

The household survey data continue to be more difficult to interpret than the business survey data. Civilian employment was estimated to have fallen by about half a million in May, seasonally adjusted, after rising by 600,000 in April. However, the timing of workers' entrance into the job market over the April-to-July period has a critical effect on the particular month that job growth shows up in the household survey results. Labor market entrance can be affected by the weather, school schedules, or even by the decisions young people make at the end of the school term.

Prior to seasonal adjustment, the May employment rise was 300,000, very low by historical standards and considerably lower than last year's 1.3 million. In past years when May employment growth has been relatively weak, substantial expansions in employment generally occurred in June or in July.

In summary, it would be premature to draw any firm conclusions about the direction of civilian employment from this 1 month's household survey figures. At this time of the year, I believe it more appropriate to focus on the business survey, which shows continued, although somewhat slower, growth than previously.

Mr. Vice Chairman, since I last appeared before the Joint Economic Committee, the Bureau has issued the results of its first nationwide survey of the pay and employee benefits for workers in the temporary help supply industry. I believe the survey provides some useful insights into the current concerns about the possible emergence of a contingent work force in the American economy. The current discussion of this issue usually focuses on those who work part time or who have temporary jobs.

Currently, about 20 million people work part time, and a much smaller number are employed by temporary help firms. The growth in part-time work was particularly large during the 1960's and 1970's, whereas the increase in temporary help was largest in the early years of the current expansion. Since 1982, part-time employment has accounted for less than 10 percent of the overall job growth. Temporary help industry employment still comprises less than 1 percent of all payroll jobs.

The BLS survey showed a wide range of pay levels among those working in the temporary help industry. Construction laborers averaged about $4 an hour, whereas engineers averaged nearly $25 an hour. About three-quarters of the temporaries were eligible for vacation pay, after working a specified number of hours. Two-fifths could qualify for paid holidays. Health-care benefits were available to only about one-fourth of the temporary workers, considerably less than the coverage found in other industries.

I would also like to point out, Mr. Vice Chairman, that while three-quarters, or about 15 million, of those working part time do so by choice, we have been concerned about the one-quarter of the part timers who would prefer full-time work. I am pleased to report that the data released this morning show a reduction of 350,000 in this part-time-for-economic-reasons category.

We would be glad to try to answer any questions.

[The table attached to Mrs. Norwood's statement, together with the Employment Situation press release, follows:]

Unemployment rates of all civilian workers by alternative seasonal adjustment methods

Month and year	Unad- justed rate	X-11 ARIMA method						X-11 method (official method before 1980)	Range (cols. 2-8)
		Official procedure	Concurrent (as first computed)	Concurrent (revised)	Stable	Total	Residual		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1987									
May..........	6.1	6.3	6.3	6.3	6.3	6.3	6.5	6.3	.2
June.........	6.3	6.1	6.1	6.1	6.1	6.1	6.2	6.1	.1
July.........	6.1	6.0	6.0	6.1	6.0	6.1	6.1	6.0	.1
August.......	5.8	6.0	6.0	6.0	6.0	6.1	6.1	6.0	.1
September...	5.7	5.9	5.9	5.9	6.0	5.9	5.9	5.9	.1
October.....	5.7	6.0	6.0	6.0	6.0	5.9	6.0	6.0	.1
November....	5.6	5.9	5.9	5.9	5.9	5.9	5.9	5.9	-
December....	5.4	5.8	5.8	5.8	5.7	5.7	5.8	5.8	.1
1988									
January.....	6.3	5.8	5.8	5.8	5.8	5.8	5.6	5.8	.2
February....	6.2	5.7	5.7	5.7	5.8	5.7	5.6	5.8	.2
March.......	5.9	5.6	5.6	5.6	5.7	5.6	5.5	5.6	.2
April.......	5.3	5.4	5.5	5.5	5.5	5.4	5.4	5.4	.1
May.........	5.4	5.6	5.6	5.6	5.6	5.6	5.8	5.6	.2

SOURCE: U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
June 1988

(1) Unadjusted rate. Unemployment rate for all civilian workers, not seasonally adjusted.

(2) Official procedure (X-11 ARIMA method). The published seasonally adjusted rate for all civilian workers. Each of the 3 major civilian labor force components--agricultural employment, nonagricultural employment and unemployment--for 4 age-sex groups--males and females, ages 16-19 and 20 years and over--are seasonally adjusted independently using data from January 1974 forward. The data series for each of these 12 components are extended by a year at each end of the original series using ARIMA (Auto-Regressive, Integrated, Moving Average) models chosen specifically for each series. Each extended series is then seasonally adjusted with the X-11 portion of the X-11 ARIMA program. The 4 teenage unemployment and nonagricultural employment components are adjusted with the additive adjustment model, while the other components are adjusted with the multiplicative model. The unemployment rate is computed by summing the 4 seasonally adjusted unemployment components and calculating that total as a percent of the civilian labor force total derived by summing all 12 seasonally adjusted components. All the seasonally adjusted series are revised at the end of each year. Extrapolated factors for January-June are computed at the beginning of each year; extrapolated factors for July-December are computed in the middle of the year after the June data become available. Each set of 6-month factors are published in advance, in the January and July issues, respectively, of Employment and Earnings.

(3) Concurrent (as first computed, X-11 ARIMA method). The official procedure for computation of the rate for all civilian workers using the 12 components is followed except that extrapolated factors are not used at all. Each component is seasonally adjusted with the X-11 ARIMA program each month as the most recent data become available. Rates for each month of the current year are shown as first computed; they are revised only once each year, at the end of the year when data for the full year become available. For example, the rate for January 1984 would be based, during 1984, on the adjustment of data from the period January 1974 through January 1984.

(4) Concurrent (revised, X-11 ARIMA method). The procedure used is identical to (3) above, and the rate for the current month (the last month displayed) will always be the same in the two columns. However, all previous months are subject to revision each month based on the seasonal adjustment of all the components with data through the current month.

(5) Stable (X-11 ARIMA method). Each of the 12 civilian labor force components is extended using ARIMA models as in the official procedure and then run through the X-11 part of the program using the stable option. This option assumes that seasonal patterns are basically constant from year-to-year and computes final seasonal factors as unweighted averages of all the seasonal-irregular components for each month across the entire span of the period adjusted. As in the official procedure, factors are extrapolated in 6-month intervals and the series are revised at the end of each year. The procedure for computation of the rate from the seasonally adjusted components is also identical to the official procedure.

(6) Total (X-11 ARIMA method). This is one alternative aggregation procedure, in which total unemployment and civilian labor force levels are extended with ARIMA models and directly adjusted with multiplicative adjustment models in the X-11 part of the program. The rate is computed by taking seasonally adjusted total unemployment as a percent of seasonally adjusted total civilian labor force. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(7) Residual (X-11 ARIMA method). This is another alternative aggregation method, in which total civilian employment and civilian labor force levels are extended using ARIMA models and then directly adjusted with multiplicative adjustment models. The seasonally adjusted unemployment level is derived by subtracting seasonally adjusted employment from seasonally adjusted labor force. The rate is then computed by taking the derived unemployment level as a percent of the labor force level. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(8) X-11 method (official method before 1980). The method for computation of the official procedure is used except that the series are not extended with ARIMA models and the factors are projected in 12-month intervals. The standard X-11 program is used to perform the seasonal adjustment.

Methods of Adjustment: The X-11 ARIMA method was developed at Statistics Canada by the Seasonal Adjustment and Times Series Staff under the direction of Estela Bee Dagum. The method is described in The X-11 ARIMA Seasonal Adjustment Method, by Estela Bee Dagum, Statistics Canada Catalogue No. 12-564E, February 1980.

The standard X-11 method is described in X-11 Variant of the Census Method II Seasonal Adjustment Program, by Julius Shiskin, Allan Young and John Musgrave (Technical Paper No. 15, Bureau of the Census, 1967).

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THE EMPLOYMENT SITUATION: MAY 1988

Nonagricultural payroll employment continued to increase in May, the Bureau of Labor Statistics of the U.S. Department of Labor reported today. Both the overall and the civilian worker jobless rates, which had dipped slightly in April, returned to their March levels of 5.5 and 5.6 percent, respectively.

Payroll employment, as measured by the monthly survey of business establishments, rose by 210,000 in May. In contrast, total civilian employment, as estimated through the monthly survey of households, showed a drop of 520,000 following a 600,000 increase in April. Recent over-the-month movements in the household employment series have been somewhat erratic.

Unemployment (Household Survey Data)

Both the number of unemployed persons and the unemployment rate, which had been drifting downward since last fall, edged up in May, returning to their March levels. About 6.8 million persons were unemployed in May, and the civilian worker unemployment rate was 5.6 percent, seasonally adjusted. Since May 1987, the unemployment level has decreased by about 800,000, and the jobless rate has declined by 0.7 percentage point. (See table A-2.)

Most of the over-the-month change in joblessness occurred among adult men, whose unemployment rate rose 0.3 percentage point to 4.9 percent, following a drop of the same magnitude in April. The rates for adult women (4.9 percent), teenagers (15.6 percent), whites (4.7 percent), blacks (12.4 percent), and Hispanics (9.0 percent) all were little changed over the month. (See tables A-2 and A-3.)

At 5.9 weeks, the median duration of unemployment was about unchanged in May, remaining at one of its lowest levels during the 1980's. (See table A-7.)

Civilian Employment and the Labor Force (Household Survey Data)

The estimate of total civilian employment--114.2 million--showed a drop of about 520,000 on a seasonally adjusted basis in May, nearly offsetting April's large increase. Consequently, the employment-population ratio fell to 61.9 percent. (See table A-2.)

The civilian labor force also declined in May, to 121.0 million, about the same level as in March. As a result, the labor force participation rate decreased, to 65.6 percent. (See table A-2.)

Table A. Major indicators of labor market activity, seasonally adjusted

Category	Quarterly averages		Monthly data			Apr.-May change
	1987	1988	1988			
	IV	I	Mar.	Apr.	May	
HOUSEHOLD DATA	Thousands of persons					
Labor force 1/	122,316	122,882	122,639	123,055	122,692	-363
Total employment 1/	115,235	115,954	115,839	116,445	115,909	-536
Civilian labor force	120,568	121,142	120,903	121,323	120,978	-345
Civilian employment	113,486	114,214	114,103	114,713	114,195	-518
Unemployment	7,082	6,928	6,801	6,610	6,783	173
Not in labor force	62,899	62,825	63,208	62,909	63,396	487
Discouraged workers	910	1,027	N.A.	N.A.	N.A.	N.A.
	Percent of labor force					
Unemployment rates:						
All workers 1/	5.8	5.6	5.5	5.4	5.5	0.1
All civilian workers	5.9	5.7	5.6	5.4	5.6	.2
Adult men	5.0	5.0	4.9	4.6	4.9	.3
Adult women	5.2	5.0	4.8	4.8	4.9	.1
Teenagers	16.6	16.0	16.5	15.9	15.6	-.3
White	5.0	4.8	4.7	4.6	4.7	.1
Black	12.2	12.5	12.8	12.2	12.4	.2
Hispanic origin	8.5	7.9	8.2	9.3	9.0	-.3
ESTABLISHMENT DATA 2/	Thousands of jobs					
Nonfarm employment	103,683	104,670	105,020	p105,269	p105,478	p209
Goods-producing	25,116	25,260	25,330	p25,438	p25,446	p8
Service-producing	78,567	79,410	79,690	p79,831	p80,032	p201
	Hours of work					
Average weekly hours:						
Total private	34.8	34.7	34.6	p34.9	p34.7	p-0.2
Manufacturing	41.1	41.0	40.9	p41.2	p41.1	p-.1
Overtime	3.9	3.8	3.7	p4.0	p4.0	p0

1/ Includes the resident Armed Forces.

2/ Establishment data have been revised to reflect March 1987 benchmarks and updated seasonal adjustment factors.

p=preliminary.

N.A.=not available.

Industry Payroll Employment (Establishment Survey Data)

Employment growth in nonagricultural establishments moderated in May, as payroll jobs increased by 210,000 to 105.5 million, seasonally adjusted. Employment gains were essentially confined to the service-producing sector. (See table B-1.) The payroll employment estimates shown in this news release have been adjusted to reflect annual benchmark revisions and the incorporation of new seasonal factors. (See the explanatory note on pages 4-5.)

Following 3 months of growth, payroll employment in the goods-producing sector showed little movement in May. Construction employment, which had posted strong gains over the prior 3 months, was unchanged. There was also no change in mining and manufacturing jobs. Within manufacturing, however, there were small gains in several industries--fabricated metals, machinery, and rubber and plastics products--where employment has been boosted by rising exports. These increases were largely offset by small declines in several other industries.

In the service-producing sector, the services industry led over-the-month increases with an employment gain of 80,000, slightly less than average. Within services, business services has had slower than usual growth in recent months, while health services has been particularly strong. Wholesale trade added 25,000 jobs, mostly in its durable goods component. Over the year, wholesale trade employment has risen by 275,000, three-fourths of which was in durable-goods distribution. Employment in the finance, insurance, and real estate industry was down slightly in May. The finance component, which had been one of the best performers throughout much of the expansion, has lost about 10,000 jobs since January.

Weekly Hours (Establishment Survey Data)

The average workweek for production or nonsupervisory workers on private nonagricultural payrolls declined by 0.2 hour in May to 34.7 hours, seasonally adjusted, while the factory workweek edged down 0.1 hour to 41.1 hours. These declines followed sharp increases in the previous month. Manufacturing overtime was unchanged at 4.0 hours, after seasonal adjustment. (See table B-2.)

The index of aggregate weekly hours of production or nonsupervisory workers on private nonagricultural payrolls, at 124.5 (1977=100), fell 0.4 percent, seasonally adjusted. The index for manufacturing also declined, 0.3 percent, to 95.8. Both series were up slightly from March. (See table B-5.)

Hourly and Weekly Earnings (Establishment Survey Data)

Average hourly earnings of private production or nonsupervisory workers rose 0.7 percent in May, seasonally adjusted, while average weekly earnings were unchanged. Prior to seasonal adjustment, average hourly earnings rose by 4 cents to $9.26, and average weekly earnings increased 47 cents to $320.40. (See table B-3.)

The Hourly Earnings Index (Establishment Survey Data)

The Hourly Earnings Index (HEI) was 178.8 (1977=100) in May, seasonally adjusted, an increase of 0.5 percent from April. For the 12 months ended in May, the increase was 3.4 percent. In dollars of constant purchasing power, the HEI decreased 0.7 percent during the 12-month period ending in April. The HEI excludes the effects of two types of changes unrelated to underlying wage rate movements--fluctuations in manufacturing overtime and interindustry employment shifts. (See table B-4.)

REVISIONS IN THE ESTABLISHMENT SURVEY DATA

In accordance with annual practice, the establishment survey data have been revised to reflect complete counts of employment (benchmarks). The counts are principally derived from unemployment insurance tax records for the first quarter of 1987. In addition, new seasonal adjustment factors have been calculated to take account of the experience through March 1988.

The effects of these adjustments on current data are shown in table B, which presents data prior to seasonal adjustment for February 1988, the last month of final published estimates prior to this benchmark revision.

Reflecting these changes, all establishment data series have been revised from April 1986 forward, and the seasonally adjusted series have been revised from January 1983 forward. The June 1988 issue of Employment and Earnings will contain a discussion of the effects of the benchmark, current seasonal adjustment factors, and revised estimates for all regularly published tables containing national establishment survey data on employment, hours, and earnings. All of the revised historical series will be published in a special supplement to Employment and Earnings, which is expected to be issued in about a month. This supplement, when combined with the historical volume, Employment, Hours, and Earnings, United States, 1909-84 (BLS Bulletin 1312-12), will comprise the full historical series on national data from the establishment survey.

The Employment Situation for June 1988 will be released on Friday, July 8, at 8:30 A.M. (EDT).

Table B. Establishment survey employment estimates for February 1988, not seasonally adjusted

(In thousands)

Industry	February 1988 employment estimates		Difference
	As revised	Before revision	
Total nonfarm employment	103,373	102,969	404
Total private	85,844	85,396	448
Mining	720	742	-22
Construction	4,628	4,641	-13
Manufacturing	19,261	19,288	-27
Transportation and public utilities	5,446	5,441	5
Wholesale trade	5,979	5,855	124
Retail trade	18,521	18,201	320
Finance, insurance, and real estate	6,571	6,625	-54
Services	24,718	24,603	115
Government	17,529	17,573	-44
Federal	2,955	2,955	0
State	4,109	4,098	11
Local	10,465	10,520	-55

Explanatory Note

This news release presents statistics from two major surveys, the Current Population Survey (household survey) and the Current Employment Statistics Survey (establishment survey). The household survey provides the information on the labor force, total employment, and unemployment that appears in the A tables, marked HOUSEHOLD DATA. It is a sample survey of about 55,800 households that is conducted by the Bureau of the Census with most of the findings analyzed and published by the Bureau of Labor Statistics (BLS).

The establishment survey provides the information on the employment, hours, and earnings of workers on nonagricultural payrolls that appears in the B tables, marked ESTABLISHMENT DATA. This information is collected from payroll records by BLS in cooperation with State agencies. The sample includes over 300,000 establishments employing over 38 million people.

For both surveys, the data for a given month are actually collected for and relate to a particular week. In the household survey, unless otherwise indicated, it is the calendar week that contains the 12th day of the month, which is called the survey week. In the establishment survey, the reference week is the pay period including the 12th, which may or may not correspond directly to the calendar week.

The data in this release are affected by a number of technical factors, including definitions, survey differences, seasonal adjustments, and the inevitable variance in results between a survey of a sample and a census of the entire population. Each of these factors is explained below.

Coverage, definitions, and differences between surveys

The sample households in the household survey are selected so as to reflect the entire civilian noninstitutional population 16 years of age and older. Each person in a household is classified as employed, unemployed, or not in the labor force. Those who hold more than one job are classified according to the job at which they worked the most hours.

People are classified as *employed* if they did any work at all as paid civilians; worked in their own business or profession or on their own farm; or worked 15 hours or more in an enterprise operated by a member of their family, whether they were paid or not. People are also counted as employed if they were on unpaid leave because of illness, bad weather, disputes between labor and management, or personal reasons. Members of the Armed Forces stationed in the United States are also included in the employed total.

People are classified as *unemployed*, regardless of their eligibility for unemployment benefits or public assistance, if they meet all of the following criteria: They had no employment during the survey week; they were available for work at that time; and they made specific efforts to find employment sometime during the prior 4 weeks. Persons laid off from their former jobs and awaiting recall and those expecting to report to a job within 30 days need not be looking for work to be counted as unemployed.

The *labor force* equals the sum of the number employed and the number unemployed. The *unemployment rate* is the percentage of unemployed people in the labor force (civilian plus the resident Armed Forces). Table A-5 presents a special grouping of seven measures of unemployment based on varying definitions of unemployment and the labor force. The definitions are provided in the table. The most restrictive definition yields U-1 and the most comprehensive yields U-7. The overall unemployment rate is U-5a, while U-5b represents the same measure with a civilian labor force base.

Unlike the household survey, the establishment survey only counts wage and salary employees whose names appear on the payroll records of nonagricultural firms. As a result, there are many differences between the two surveys, among which are the following:

— The household survey, although based on a smaller sample, reflects a larger segment of the population; the establishment survey excludes agriculture, the self-employed, unpaid family workers, private household workers, and members of the resident Armed Forces;

— The household survey includes people on unpaid leave among the employed; the establishment survey does not;

— The household survey is limited to those 16 years of age and older; the establishment survey is not limited by age;

— The household survey has no duplication of individuals, because each individual is counted only once; in the establishment survey, employees working at more than one job or otherwise appearing on more than one payroll would be counted separately for each appearance.

Other differences between the two surveys are described in "Comparing Employment Estimates from Household and Payroll Surveys," which may be obtained from the BLS upon request.

Seasonal adjustment

Over the course of a year, the size of the Nation's labor force and the levels of employment and unemployment undergo sharp fluctuations due to such seasonal events as changes in weather, reduced or expanded production, harvests, major holidays, and the opening and closing of schools. For example, the labor force increases by a large number each June, when schools close and many young people enter the job market. The effect of such seasonal variation can be very large; over the course of a year, for example, seasonality may account for as much as 95 percent of the month-to-month changes in unemployment.

Because these seasonal events follow a more or less regular pattern each year, their influence on statistical trends can be eliminated by adjusting the statistics from month to month. These adjustments make nonseasonal developments, such as declines in economic activity or increases in the participation of women in the labor force, easier to spot. To return to the school's-out example, the large number of people entering the labor force each June is likely to obscure any other changes that have taken place since May, making it difficult to determine if the level of economic activity has risen or declined. However, because the effect of students finishing school in previous years is known, the statistics for the current year can be adjusted to allow for a comparable change. Insofar as the seasonal adjustment is made correctly, the adjusted figure provides a more useful tool with which to analyze changes in economic activity.

Measures of labor force, employment, and unemployment contain components such as age and sex. Statistics for all employees, production workers, average weekly hours, and average hourly earnings include components based on the employer's industry. All these statistics can be seasonally adjusted either by adjusting the total or by adjusting each of the components and combining them. The second procedure usually yields more accurate information and is therefore followed by BLS. For example, the seasonally adjusted figure for the labor force is the sum of eight seasonally adjusted civilian employment components, plus the resident Armed Forces total (not adjusted for seasonality), and four seasonally adjusted unemployment components; the total for unemployment is the sum of the four unemployment components; and the overall unemployment rate is derived by dividing the resulting estimate of total unemployment by the estimate of the labor force.

The numerical factors used to make the seasonal adjustments are recalculated regularly. For the household survey, the factors are calculated for the January-June period and again for the July-December period. The January revision is applied to data that have been published over the previous 5 years. For the establishment survey, updated factors for seasonal adjustment are calculated only once a year, along with the introduction of new benchmarks which are discussed at the end of the next section.

Sampling variability

Statistics based on the household and establishment surveys are subject to sampling error, that is, the estimate of the number of people employed and the other estimates drawn from these surveys probably differ from the figures that would be obtained from a complete census, even if the same questionnaires and procedures were used. In the household survey, the amount of the differences can be expressed in terms of standard errors. The numerical value of a standard error depends upon the size of the sample, the results of the survey, and other factors. However, the numerical value is always such that the chances are approximately 68 out of 100 that an estimate based on the sample will differ by no more than the standard error from the results of a complete census. The chances are approximately 90 out of 100 that an estimate based on the sample will differ by no more than 1.6 times the standard error from the results of a complete census. At approximately the 90-percent level of confidence—the confidence limits used by BLS in its analyses—the error for the monthly change in total employment is on the order of plus or minus 358,000; for total unemployment it is 224,000; and, for the overall unemployment rate, it is 0.19 percentage point. These figures do not mean that the sample results are off by these magnitudes but, rather, that the chances are approximately 90 out of 100 that the "true" level or rate would not be expected to differ from the estimates by more than these amounts.

Sampling errors for monthly surveys are reduced when the data are cumulated for several months, such as quarterly or annually. Also, as a general rule, the smaller the estimate, the larger the sampling error. Therefore, relatively speaking, the estimate of the size of the labor force is subject to less error than is the estimate of the number unemployed. And, among the unemployed, the sampling error for the jobless rate of adult men, for example, is much smaller than is the error for the jobless rate of teenagers. Specifically, the error on monthly change in the jobless rate for men is .25 percentage point; for teenagers, it is 1.29 percentage points.

In the establishment survey, estimates for the 2 most current months are based on incomplete returns; for this reason, these estimates are labeled preliminary in the tables. When all the returns in the sample have been received, the estimates are revised. In other words, data for the month of September are published in preliminary form in October and November and in final form in December. To remove errors that build up over time, a comprehensive count of the employed is conducted each year. The results of this survey are used to establish new benchmarks—comprehensive counts of employment—against which month-to-month changes can be measured. The new benchmarks also incorporate changes in the classification of industries and allow for the formation of new establishments.

Additional statistics and other information

In order to provide a broad view of the Nation's employment situation, BLS regularly publishes a wide variety of data in this news release. More comprehensive statistics are contained in *Employment and Earnings*, published each month by BLS. It is available for $8.50 per issue or $22.00 per year from the U.S. Government Printing Office, Washington, DC 20204. A check or money order made out to the Superintendent of Documents must accompany all orders.

Employment and Earnings also provides approximations of the standard errors for the household survey data published in this release. For unemployment and other labor force categories, the standard errors appear in tables B through J of its "Explanatory Notes." Measures of the reliability of the data drawn from the establishment survey and the actual amounts of revision due to benchmark adjustments are provided in tables M, O, P, and Q of that publication.

Table A-1. Employment status of the population, including Armed Forces in the United States, by sex

(Numbers in thousands)

Employment status and sex	Not seasonally adjusted			Seasonally adjusted[1]					
	May 1987	Apr. 1988	May 1988	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988	May 1988
TOTAL									
Noninstitutional population[2]	184,259	185,964	186,088	184,259	185,571	185,705	185,847	185,964	186,088
Labor force[2]	121,421	121,996	122,489	121,633	122,924	123,084	122,639	123,055	122,692
Participation rate[3]	65.9	65.6	65.8	66.0	66.2	66.3	66.0	66.2	65.9
Total employed[2]	114,103	115,637	115,936	114,060	115,878	116,145	115,839	116,445	115,909
Employment-population ratio[4]	61.9	62.2	62.3	61.9	62.4	62.5	62.3	62.6	62.3
Resident Armed Forces	1,726	1,732	1,714	1,726	1,749	1,736	1,736	1,732	1,714
Civilian employed	112,377	113,905	114,222	112,334	114,129	114,409	114,103	114,713	114,195
Agriculture	3,541	3,193	3,292	3,269	3,293	3,228	3,204	3,228	3,035
Nonagricultural industries	108,836	110,712	110,930	109,065	110,836	111,182	110,899	111,485	111,160
Unemployed	7,318	6,359	6,553	7,573	7,046	6,938	6,801	6,610	6,783
Unemployment rate[5]	6.0	5.2	5.3	6.2	5.7	5.6	5.5	5.4	5.5
Not in labor force	62,838	63,968	63,599	62,626	62,647	62,621	63,208	62,909	63,396
Men, 16 years and over									
Noninstitutional population[2]	88,361	89,225	89,287	88,361	89,033	89,099	89,168	89,225	89,287
Labor force[2]	67,738	67,798	68,272	67,802	68,243	68,343	68,148	68,445	68,318
Participation rate[3]	76.7	76.0	76.5	76.7	76.6	76.7	76.4	76.7	76.5
Total employed[2]	63,660	64,288	64,696	63,543	64,396	64,636	64,332	64,892	64,583
Employment-population ratio[4]	72.0	72.1	72.5	71.9	72.3	72.5	72.1	72.7	72.3
Resident Armed Forces	1,566	1,569	1,553	1,566	1,588	1,577	1,573	1,569	1,553
Civilian employed	62,094	62,719	63,143	61,977	62,808	63,059	62,759	63,323	63,030
Unemployed	4,078	3,510	3,575	4,259	3,847	3,707	3,816	3,553	3,736
Unemployment rate[5]	6.0	5.2	5.2	6.3	5.6	5.4	5.6	5.2	5.5
Women, 16 years and over									
Noninstitutional population[2]	95,898	96,739	96,801	95,898	96,538	96,606	96,679	96,739	96,801
Labor force[2]	53,683	54,198	54,218	53,831	54,681	54,740	54,491	54,610	54,374
Participation rate[3]	56.0	56.0	56.0	56.1	56.6	56.7	56.4	56.5	56.2
Total employed[2]	50,443	51,349	51,240	50,517	51,482	51,509	51,507	51,553	51,327
Employment-population ratio[4]	52.6	53.1	52.9	52.7	53.3	53.3	53.3	53.3	53.0
Resident Armed Forces	160	163	161	160	161	159	163	163	161
Civilian employed	50,283	51,186	51,079	50,357	51,321	51,350	51,344	51,390	51,166
Unemployed	3,240	2,849	2,978	3,314	3,200	3,231	2,985	3,057	3,047
Unemployment rate[5]	6.0	5.3	5.5	6.2	5.9	5.9	5.5	5.6	5.6

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[1] The population and Armed Forces figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Includes members of the Armed Forces stationed in the United States.

[3] Labor force as a percent of the noninstitutional population.

[4] Total employment as a percent of the noninstitutional population.

[5] Unemployment as a percent of the labor force (including the resident Armed Forces).

Table A-2. Employment status of the civilian population by sex and age

(Numbers in thousands)

Employment status, sex, and age	Not seasonally adjusted			Seasonally adjusted[1]					
	May 1987	Apr. 1988	May 1988	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988	May 1988
TOTAL									
Civilian noninstitutional population	182,533	184,232	184,374	182,533	183,822	183,969	184,111	184,232	184,374
Civilian labor force	119,695	120,264	120,775	119,907	121,175	121,348	120,903	121,323	120,978
Participation rate	65.6	65.3	65.5	65.7	65.9	66.0	65.7	65.9	65.6
Employed	112,377	113,905	114,222	112,334	114,129	114,409	114,103	114,713	114,195
Employment-population ratio[2]	61.6	61.8	62.0	61.5	62.1	62.2	62.0	62.3	61.9
Unemployed	7,318	6,359	6,553	7,573	7,046	6,938	6,801	6,610	6,783
Unemployment rate	6.1	5.3	5.4	6.3	5.8	5.7	5.6	5.4	5.6
Men, 20 years and over									
Civilian noninstitutional population	79,474	80,326	80,402	79,474	80,120	80,203	80,260	80,326	80,402
Civilian labor force	62,147	62,442	62,696	62,129	62,440	62,696	62,497	62,791	62,662
Participation rate	78.2	77.7	78.0	78.2	77.9	78.2	77.9	78.2	77.9
Employed	58,828	59,504	59,745	58,673	59,287	59,625	59,407	59,883	59,590
Employment-population ratio[2]	74.0	74.1	74.3	73.8	74.0	74.3	74.0	74.5	74.1
Agriculture	2,548	2,280	2,336	2,383	2,323	2,280	2,253	2,255	2,181
Nonagricultural industries	56,280	57,224	57,409	56,290	56,964	57,344	57,154	57,627	57,409
Unemployed	3,319	2,938	2,952	3,456	3,154	3,071	3,089	2,909	3,072
Unemployment rate	5.3	4.7	4.7	5.6	5.1	4.9	4.9	4.6	4.9
Women, 20 years and over									
Civilian noninstitutional population	88,464	89,307	89,382	88,464	89,110	89,178	89,261	89,307	89,382
Civilian labor force	49,725	50,465	50,426	49,728	50,558	50,640	50,542	50,612	50,441
Participation rate	56.2	56.5	56.4	56.2	56.7	56.8	56.6	56.7	56.4
Employed	47,104	48,162	48,018	47,028	47,977	48,005	48,132	48,170	47,960
Employment-population ratio[2]	53.2	53.9	53.7	53.2	53.8	53.8	53.9	53.9	53.7
Agriculture	690	637	644	629	646	654	656	692	587
Nonagricultural industries	46,414	47,525	47,373	46,399	47,331	47,351	47,476	47,478	47,373
Unemployed	2,621	2,303	2,409	2,700	2,581	2,635	2,411	2,442	2,481
Unemployment rate	5.3	4.6	4.8	5.4	5.1	5.2	4.8	4.8	4.9
Both sexes, 16 to 19 years									
Civilian noninstitutional population	14,595	14,598	14,590	14,595	14,592	14,588	14,591	14,598	14,590
Civilian labor force	7,823	7,357	7,652	8,050	8,177	8,011	7,865	7,919	7,875
Participation rate	53.6	50.4	52.4	55.2	56.0	54.9	53.9	54.2	54.0
Employed	6,445	6,239	6,459	6,633	6,865	6,779	6,564	6,660	6,645
Employment-population ratio[2]	44.2	42.7	44.3	45.4	47.0	46.5	45.0	45.6	45.5
Agriculture	303	276	312	257	323	293	295	280	267
Nonagricultural industries	6,142	5,962	6,147	6,376	6,542	6,486	6,269	6,380	6,378
Unemployed	1,378	1,118	1,193	1,417	1,312	1,232	1,301	1,259	1,230
Unemployment rate	17.6	15.2	15.6	17.6	16.0	15.4	16.5	15.9	15.6

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	May 1987	Apr. 1988	May 1988	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988	May 1988
WHITE									
Civilian noninstitutional population	156,811	157,943	158,034	156,811	157,676	157,773	157,868	157,943	158,034
Civilian labor force	103,271	103,758	104,125	103,416	104,252	104,530	104,171	104,574	104,209
Participation rate	65.9	65.7	65.9	65.9	66.1	66.3	66.0	66.2	65.9
Employed	97,908	99,141	99,414	97,829	99,044	99,474	99,274	99,751	99,297
Employment-population ratio[2]	62.4	62.8	62.9	62.4	62.8	63.0	62.9	63.2	62.8
Unemployed	5,363	4,617	4,711	5,587	5,208	5,056	4,897	4,824	4,913
Unemployment rate	5.2	4.5	4.5	5.4	5.0	4.8	4.7	4.6	4.7
Men, 20 years and over									
Civilian labor force	54,282	54,430	54,703	54,238	54,455	54,650	54,522	54,699	54,618
Participation rate	78.6	78.1	78.4	78.5	78.3	78.5	78.2	78.5	78.3
Employed	51,807	52,275	52,523	51,626	52,053	52,389	52,245	52,538	52,314
Employment-population ratio[2]	75.0	75.0	75.3	74.7	74.8	75.2	75.0	75.4	75.0
Unemployed	2,474	2,155	2,180	2,612	2,402	2,260	2,277	2,161	2,304
Unemployment rate	4.6	4.0	4.0	4.8	4.4	4.1	4.2	4.0	4.2
Women, 20 years and over									
Civilian labor force	42,151	42,882	42,808	42,182	42,710	42,915	42,841	42,986	42,827
Participation rate	55.6	56.2	56.0	55.7	56.1	56.3	56.2	56.3	56.1
Employed	40,303	41,297	41,145	40,268	40,896	40,985	41,183	41,297	41,104
Employment-population ratio[2]	53.2	54.1	53.9	53.1	53.7	53.8	54.0	54.1	53.8
Unemployed	1,848	1,586	1,663	1,914	1,813	1,930	1,658	1,689	1,723
Unemployment rate	4.4	3.7	3.9	4.5	4.2	4.5	3.9	3.9	4.0
Both sexes, 16 to 19 years									
Civilian labor force	6,838	6,445	6,614	6,996	7,087	6,965	6,807	6,889	6,764
Participation rate	57.2	54.2	55.7	58.5	59.6	58.6	57.2	58.0	57.0
Employed	5,798	5,569	5,746	5,935	6,095	6,100	5,845	5,916	5,879
Employment-population ratio[2]	48.5	46.9	48.4	49.7	51.2	51.3	49.1	49.6	49.5
Unemployed	1,041	876	868	1,061	992	865	962	973	885
Unemployment rate	15.2	13.6	13.1	15.2	14.0	12.4	14.1	14.1	13.1
Men	16.3	14.1	13.0	17.0	14.4	12.2	15.7	14.5	13.8
Women	14.1	13.1	13.2	13.3	13.6	12.7	12.4	13.7	12.4
BLACK									
Civilian noninstitutional population	20,312	20,622	20,650	20,312	20,539	20,569	20,596	20,622	20,650
Civilian labor force	12,861	12,941	13,042	12,889	13,222	13,168	13,098	13,078	13,069
Participation rate	63.3	62.8	63.2	63.5	64.4	64.0	63.6	63.4	63.3
Employed	11,119	11,394	11,440	11,129	11,608	11,504	11,420	11,482	11,452
Employment-population ratio[2]	54.7	55.3	55.4	54.8	56.5	55.9	55.4	55.7	55.5
Unemployed	1,742	1,547	1,602	1,760	1,614	1,663	1,678	1,597	1,617
Unemployment rate	13.5	12.0	12.3	13.7	12.2	12.6	12.8	12.2	12.4
Men, 20 years and over									
Civilian labor force	6,051	6,142	6,123	6,037	6,115	6,166	6,127	6,163	6,107
Participation rate	75.2	75.1	74.7	75.0	75.0	75.6	75.0	75.3	74.5
Employed	5,311	5,467	5,465	5,296	5,497	5,472	5,429	5,511	5,449
Employment-population ratio[2]	66.0	66.8	66.7	65.8	67.5	67.1	66.4	67.3	66.5
Unemployed	740	675	658	741	618	694	699	652	658
Unemployment rate	12.2	11.0	10.7	12.3	10.1	11.3	11.4	10.6	10.8
Women, 20 years and over									
Civilian labor force	5,991	6,062	6,061	5,987	6,244	6,131	6,136	6,093	6,059
Participation rate	59.3	59.1	59.0	59.3	61.1	59.9	59.9	59.4	59.0
Employed	5,294	5,412	5,414	5,292	5,550	5,495	5,465	5,407	5,414
Employment-population ratio[2]	52.4	52.7	52.7	52.4	54.3	53.7	53.3	52.7	52.7
Unemployed	697	650	647	695	694	636	671	686	645
Unemployment rate	11.6	10.7	10.7	11.6	11.1	10.4	10.9	11.3	10.6
Both sexes, 16 to 19 years									
Civilian labor force	819	737	857	865	863	870	834	822	903
Participation rate	37.9	33.8	39.3	40.0	39.8	40.0	38.3	37.7	41.4
Employed	514	516	560	541	561	537	526	564	589
Employment-population ratio[2]	23.8	23.7	25.7	25.0	25.5	24.7	24.2	25.9	27.0
Unemployed	305	221	297	324	302	333	308	258	314
Unemployment rate	37.3	30.0	34.6	37.5	35.0	38.3	36.9	31.4	34.8
Men	38.0	24.8	33.1	38.3	35.1	42.0	39.0	27.6	33.3
Women	36.5	35.8	36.7	36.6	34.9	34.7	35.0	35.5	36.6
HISPANIC ORIGIN									
Civilian noninstitutional population	12,809	13,230	13,268	12,809	13,115	13,153	13,192	13,230	13,268
Civilian labor force	8,506	8,773	8,819	8,549	8,879	9,017	8,803	8,825	8,859
Participation rate	66.4	66.3	66.5	66.7	67.7	68.5	66.7	66.7	66.8
Employed	7,791	8,002	8,058	7,797	8,238	8,266	8,079	8,013	8,058
Employment-population ratio[2]	60.8	60.5	60.7	60.9	62.8	62.9	61.2	60.5	60.7
Unemployed	715	771	762	752	642	749	724	812	801
Unemployment rate	8.4	8.8	8.6	8.8	7.2	8.3	8.2	9.3	9.0

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[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

Table A-4. Selected employment indicators

(In thousands)

Category	Not seasonally adjusted			Seasonally adjusted					
	May 1987	Apr. 1988	May 1988	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988	May 1988
CHARACTERISTIC									
Civilian employed, 16 years and over	112,377	113,905	114,222	112,334	114,129	114,409	114,103	114,713	114,195
Married men, spouse present	40,189	40,338	40,388	40,075	40,404	40,475	40,481	40,459	40,267
Married women, spouse present	28,410	28,888	28,681	28,314	28,441	28,707	28,805	28,859	28,567
Women who maintain families	6,051	6,109	6,034	5,963	6,168	6,157	6,160	6,055	5,957
MAJOR INDUSTRY AND CLASS OF WORKER									
Agriculture:									
Wage and salary workers	1,846	1,688	1,685	1,672	1,666	1,677	1,648	1,678	1,526
Self-employed workers	1,501	1,356	1,419	1,429	1,454	1,414	1,423	1,385	1,346
Unpaid family workers	194	149	188	165	138	114	142	155	159
Nonagricultural industries:									
Wage and salary workers	100,475	101,897	101,786	100,634	102,507	102,683	102,279	102,538	101,927
Government	16,910	17,236	17,090	16,708	17,197	16,948	16,908	17,015	16,887
Private industries	83,566	84,660	84,696	83,926	85,310	85,735	85,371	85,523	85,040
Private households	1,265	1,087	1,180	1,240	1,147	1,170	1,175	1,092	1,156
Other industries	82,301	83,573	83,516	82,686	84,163	84,565	84,196	84,431	83,884
Self-employed workers	8,093	8,533	8,846	8,157	8,150	8,312	8,366	8,637	8,917
Unpaid family workers	268	283	297	276	237	228	248	[illegible]	307
PERSONS AT WORK PART TIME[1]									
All industries:									
Part time for economic reasons	5,139	4,851	4,674	5,333	5,367	5,566	5,343	5,194	4,844
Slack work	2,156	2,167	2,096	2,292	2,396	2,478	2,520	2,236	2,227
Could only find part-time work	2,561	2,287	2,215	2,677	2,640	2,598	2,535	2,502	2,315
Voluntary part time	15,243	16,082	15,544	14,498	14,571	14,572	14,603	15,016	14,790
Nonagricultural industries:									
Part time for economic reasons	4,898	4,624	4,484	5,058	5,145	5,254	5,106	4,924	4,623
Slack work	2,013	2,053	2,008	2,126	2,260	2,327	2,325	2,121	2,120
Could only find part-time work	2,475	2,196	2,126	2,603	2,566	2,457	2,475	2,397	2,236
Voluntary part time	14,660	15,540	15,012	13,995	14,096	14,123	14,141	14,592	14,338

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial dispute.

Table A-5. Range of unemployment measures based on varying definitions of unemployment and the labor force, seasonally adjusted

(Percent)

Measure	Quarterly averages					Monthly data		
	1987				1988	1988		
	I	II	III	IV	I	Mar.	Apr.	May
U-1 Persons unemployed 15 weeks or longer as a percent of the civilian labor force	1.8	1.7	1.6	1.5	1.4	1.4	1.3	1.3
U-2 Job losers as a percent of the civilian labor force	3.2	3.0	2.8	2.7	2.6	2.6	2.4	2.7
U-3 Unemployed persons 25 years and over as a percent of the civilian labor force	5.1	4.8	4.6	4.5	4.4	4.2	4.1	4.3
U-4 Unemployed full-time jobseekers as a percent of the full-time civilian labor force	6.2	5.9	5.6	5.5	5.4	5.3	5.1	5.2
U-5a Total unemployed as a percent of the labor force, including the resident Armed Forces	6.5	6.2	5.9	5.8	5.6	5.5	5.4	5.5
U-5b Total unemployed as a percent of the civilian labor force	6.6	6.3	6.0	5.9	5.7	5.6	5.4	5.6
U-6 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons as a percent of the civilian labor force less 1/2 of the part-time labor force	9.0	8.5	8.2	8.1	8.0	7.9	7.6	7.6
U-7 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons plus discouraged workers as a percent of the civilian labor force plus discouraged workers less 1/2 of the part-time labor force	9.9	9.3	9.0	8.8	8.8	N.A.	N.A.	N.A.

N.A. = not available.

Table A-6. Selected unemployment indicators, seasonally adjusted

Category	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	May 1987	Apr. 1988	May 1988	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988	May 1988
CHARACTERISTIC									
Total, 16 years and over	7,573	6,610	6,783	6.3	5.8	5.7	5.6	5.4	5.6
Men, 16 years and over	4,259	3,553	3,736	6.4	5.8	5.6	5.7	5.3	5.6
Men, 20 years and over	3,456	2,909	3,072	5.6	5.1	4.9	4.9	4.6	4.9
Women, 16 years and over	3,314	3,057	3,047	6.2	5.9	5.9	5.5	5.6	5.6
Women, 20 years and over	2,700	2,442	2,481	5.4	5.1	5.2	4.8	4.8	4.9
Both sexes, 16 to 19 years	1,417	1,259	1,230	17.6	16.0	15.4	16.5	15.9	15.6
Married men, spouse present	1,659	1,262	1,359	4.0	3.6	3.4	3.4	3.0	3.3
Married women, spouse present	1,247	1,128	1,157	4.2	4.2	4.1	4.0	3.8	3.9
Women who maintain families	627	573	546	9.5	8.9	8.3	7.5	8.7	8.4
Full-time workers	6,053	5,302	5,418	5.9	5.4	5.3	5.3	5.1	5.2
Part-time workers	1,502	1,299	1,341	8.7	8.3	7.9	7.7	7.4	7.7
Labor force time lost[2]	--	--	--	7.2	6.6	6.6	6.5	6.2	6.4
INDUSTRY									
Nonagricultural private wage and salary workers	5,634	4,793	5,099	6.3	5.8	5.7	5.6	5.3	5.7
Goods-producing industries	2,234	1,903	1,925	7.7	7.1	6.9	6.5	6.5	6.6
Mining	104	70	80	13.0	7.7	7.8	7.9	8.4	10.4
Construction	749	679	660	12.1	12.2	11.0	10.7	10.6	10.5
Manufacturing	1,381	1,154	1,185	6.3	5.6	5.6	5.2	5.3	5.4
Durable goods	796	621	636	6.2	5.5	5.9	5.2	4.8	4.9
Nondurable goods	585	534	548	6.5	5.8	5.3	5.3	6.0	6.0
Service-producing industries	3,400	2,890	3,174	5.6	5.3	5.1	5.2	4.7	5.2
Transportation and public utitities	275	243	281	4.4	3.6	3.6	4.2	3.8	4.4
Wholesale and retail trade	1,597	1,330	1,430	7.0	6.1	6.4	6.8	5.9	6.3
Finance and service industries	1,528	1,317	1,463	4.9	4.9	4.5	4.2	4.1	4.6
Government workers	583	520	509	3.4	3.0	2.8	2.8	3.0	2.9
Agricultural wage and salary workers	174	199	246	9.4	11.5	10.2	11.0	10.6	13.9

[1] Unemployment as a percent of the civilian labor force.

[2] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

Table A-7. Duration of unemployment

(Numbers in thousands)

Weeks of unemployment	Not seasonally adjusted			Seasonally adjusted					
	May 1987	Apr. 1988	May 1988	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988	May 1988
DURATION									
Less than 5 weeks	3,255	2,781	3,035	3,308	3,089	3,084	3,009	3,125	3,075
5 to 14 weeks	1,798	1,751	1,753	2,165	2,263	2,145	2,101	1,956	2,110
15 weeks and over	2,265	1,827	1,765	2,067	1,733	1,740	1,722	1,540	1,609
15 to 26 weeks	1,105	963	891	974	839	841	887	725	784
27 weeks and over	1,160	864	874	1,093	894	899	835	816	825
Average (mean) duration, in weeks	15.5	14.4	14.4	14.8	14.4	14.4	13.7	13.4	13.8
Median duration, in weeks	6.6	6.8	5.9	6.6	6.4	6.4	6.6	5.6	5.9
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 5 weeks	44.5	43.7	46.3	43.9	43.6	44.3	44.0	47.2	45.3
5 to 14 weeks	24.6	27.5	26.8	28.7	31.9	30.8	30.8	29.5	31.1
15 weeks and over	31.0	28.7	26.9	27.4	24.5	25.0	25.2	23.3	23.7
15 to 26 weeks	15.1	15.1	13.6	12.9	11.8	12.1	13.0	10.9	11.5
27 weeks and over	15.9	13.6	13.3	14.5	12.6	12.9	12.2	12.3	12.1

Table A-8. Reason for unemployment

(Numbers in thousands)

Reason	Not seasonally adjusted			Seasonally adjusted					
	May 1987	Apr. 1988	May 1988	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988	May 1988
NUMBER OF UNEMPLOYED									
Job losers	3,412	2,977	3,058	3,612	3,209	3,207	3,139	2,916	3,236
On layoff	815	785	698	924	888	884	899	821	793
Other job losers	2,597	2,192	2,360	2,688	2,320	2,323	2,240	2,095	2,443
Job leavers	830	895	820	931	1,082	961	1,075	993	926
Reentrants	2,044	1,643	1,835	1,995	1,917	1,951	1,756	1,784	1,789
New entrants	1,033	843	841	999	885	864	887	915	807
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	46.6	46.8	46.7	47.9	45.2	45.9	45.8	44.1	47.9
On layoff	11.1	12.3	10.7	12.3	12.5	12.7	13.1	12.4	11.7
Other job losers	35.5	34.5	36.0	35.7	32.7	33.3	32.7	31.7	36.2
Job leavers	11.3	14.1	12.5	12.4	15.3	13.8	15.7	15.0	13.7
Reentrants	27.9	25.8	28.0	26.5	27.0	27.9	25.6	27.0	26.5
New entrants	14.1	13.3	12.8	13.3	12.5	12.4	12.9	13.8	11.9
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE									
Job losers	2.9	2.5	2.6	3.0	2.6	2.6	2.6	2.4	2.7
Job leavers	.7	.7	.7	.8	.9	.8	.9	.8	.8
Reentrants	1.7	1.4	1.5	1.7	1.6	1.6	1.5	1.5	1.5
New entrants	.9	.7	.7	.8	.7	.7	.7	.8	.7

Table A-9. Unemployed persons by sex and age, seasonally adjusted

Sex and age	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	May 1987	Apr. 1988	May 1988	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988	May 1988
Total, 16 years and over	7,573	6,610	6,783	6.3	5.8	5.7	5.6	5.4	5.6
16 to 24 years	2,895	2,532	2,519	12.5	11.6	11.1	11.7	11.2	11.3
16 to 19 years	1,417	1,259	1,230	17.6	16.0	15.4	16.5	15.9	15.6
16 to 17 years	717	580	509	21.0	18.7	17.4	17.6	17.8	16.1
18 to 19 years	702	658	720	15.2	14.5	13.9	15.8	14.2	15.3
20 to 24 years	1,478	1,273	1,289	9.8	9.1	8.7	9.1	8.7	8.9
25 years and over	4,657	4,082	4,251	4.8	4.5	4.5	4.2	4.1	4.3
25 to 54 years	4,134	3,625	3,744	5.1	4.7	4.7	4.5	4.3	4.5
55 years and over	532	446	520	3.6	3.5	3.3	2.9	2.9	3.5
Men, 16 years and over	4,259	3,553	3,736	6.4	5.8	5.6	5.7	5.3	5.6
16 to 24 years	1,586	1,315	1,354	13.2	12.2	11.3	12.1	11.2	11.6
16 to 19 years	803	644	664	19.6	16.4	15.6	17.8	15.8	16.2
16 to 17 years	401	291	275	22.7	19.4	16.9	18.5	17.2	16.7
18 to 19 years	402	352	388	17.2	14.9	14.7	17.3	14.7	15.8
20 to 24 years	783	671	690	9.9	9.9	9.0	9.1	8.8	9.1
25 years and over	2,648	2,243	2,363	4.9	4.4	4.3	4.3	4.1	4.3
25 to 54 years	2,310	1,951	2,051	5.1	4.5	4.5	4.5	4.2	4.4
55 years and over	348	276	323	3.9	4.0	3.4	3.4	3.1	3.7
Women, 16 years and over	3,314	3,057	3,047	6.2	5.9	5.9	5.5	5.6	5.6
16 to 24 years	1,309	1,217	1,166	11.8	10.9	10.8	11.3	11.3	11.0
16 to 19 years	614	615	566	15.6	15.6	15.1	15.2	16.0	15.0
16 to 17 years	316	289	234	19.1	17.9	18.0	16.6	18.4	15.5
18 to 19 years	300	306	332	13.1	14.1	13.1	14.2	13.7	14.7
20 to 24 years	695	602	600	9.7	8.2	8.4	9.1	8.7	8.8
25 years and over	2,009	1,838	1,888	4.7	4.6	4.7	4.1	4.2	4.3
25 to 54 years	1,824	1,674	1,693	5.0	4.9	4.9	4.4	4.5	4.5
55 years and over	184	170	197	3.0	2.8	3.1	2.3	2.7	3.2

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[1] Unemployment as a percent of the civilian labor force.

Table A-10. Employment status of black and other workers

(Numbers in thousands)

Employment status	Not seasonally adjusted			Seasonally adjusted[1]					
	May 1987	Apr. 1988	May 1988	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988	May 1988
Civilian noninstitutional population	25,723	26,289	26,340	25,723	26,146	26,196	26,243	26,289	26,340
Civilian labor force	16,424	16,506	16,650	16,472	16,926	16,779	16,779	16,733	16,698
Participation rate	63.9	62.8	63.2	64.0	64.7	64.1	63.9	63.7	63.4
Employed	14,469	14,764	14,807	14,475	15,076	14,884	14,853	14,939	14,818
Employment-population ratio[2]	56.2	56.2	56.2	56.3	57.7	56.8	56.6	56.8	56.3
Unemployed	1,955	1,742	1,843	1,997	1,850	1,895	1,926	1,795	1,879
Unemployment rate	11.9	10.6	11.1	12.1	10.9	11.3	11.5	10.7	11.3
Not in labor force	9,298	9,783	9,690	9,251	9,220	9,417	9,464	9,556	9,642

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-11. Occupational status of the employed and unemployed, not seasonally adjusted

(Numbers in thousands)

Occupation	Civilian employed		Unemployed		Unemployment rate	
	May 1987	May 1988	May 1987	May 1988	May 1987	May 1988
Total, 16 years and over[1]	112,377	114,222	7,318	6,553	6.1	5.4
Managerial and professional specialty	27,536	29,113	627	499	2.2	1.7
Executive, administrative, and managerial	13,117	14,289	362	299	2.7	2.0
Professional specialty	14,418	14,824	265	200	1.8	1.3
Technical, sales, and administrative support	34,868	34,740	1,539	1,477	4.2	4.1
Technicians and related support	3,234	3,363	109	105	3.3	3.0
Sales occupations	13,463	13,463	729	637	5.1	4.5
Administrative support, including clerical	18,171	17,914	700	734	3.7	3.9
Service occupations	15,125	15,250	1,197	1,116	7.3	6.8
Private household	899	905	52	51	5.5	5.4
Protective service	1,887	1,884	104	94	5.2	4.8
Service, except private household and protective	12,339	12,461	1,041	970	7.8	7.2
Precision production, craft, and repair	13,456	13,859	881	749	6.1	5.1
Mechanics and repairers	4,341	4,553	198	163	4.4	3.4
Construction trades	4,990	5,180	453	364	8.3	6.6
Other precision production, craft, and repair	4,125	4,126	230	223	5.3	5.1
Operators, fabricators, and laborers	17,381	17,540	1,806	1,596	9.4	8.3
Machine operators, assemblers, and inspectors	7,943	7,988	820	642	9.4	7.4
Transportation and material moving occupations	4,714	4,823	315	283	6.3	5.5
Handlers, equipment cleaners, helpers, and laborers	4,724	4,729	671	671	12.4	12.4
Construction laborers	810	717	178	186	18.0	20.6
Other handlers, equipment cleaners, helpers, and laborers	3,914	4,011	493	485	11.2	10.8
Farming, forestry, and fishing	4,012	3,720	185	242	4.4	6.1

[1] Persons with no previous work experience and those whose last job was in the Armed Forces are included in the unemployed total.

Table A-12. Employment status of male Vietnam-era veterans and nonveterans by age, not seasonally adjusted

(Numbers in thousands)

Veteran status and age	Civilian noninstitutional population		Civilian labor force							
			Total		Employed		Unemployed			
							Number		Percent of labor force	
	May 1987	May 1988	May 1987	May 1988	May 1987	May 1988	May 1987	May 1988	May 1987	May 1988
VIETNAM-ERA VETERANS										
Total, 30 years and over	7,836	7,900	7,250	7,290	6,937	6,984	313	306	4.3	4.2
30 to 44 years	6,260	5,975	5,974	5,696	5,723	5,440	251	256	4.2	4.5
30 to 34 years	956	718	912	677	841	618	71	59	7.8	8.7
35 to 39 years	2,663	2,214	2,538	2,095	2,433	2,005	105	90	4.1	4.3
40 to 44 years	2,641	3,043	2,524	2,924	2,449	2,817	75	107	3.0	3.7
45 years and over	1,576	1,925	1,276	1,594	1,214	1,544	62	50	4.9	3.1
NONVETERANS										
Total, 30 to 44 years	19,321	20,284	18,244	19,115	17,405	18,334	839	781	4.6	4.1
30 to 34 years	8,812	9,048	8,403	8,539	8,009	8,167	394	372	4.7	4.4
35 to 39 years	6,137	6,751	5,787	6,409	5,526	6,167	261	242	4.5	3.8
40 to 44 years	4,372	4,485	4,054	4,167	3,870	4,000	184	167	4.5	4.0

NOTE: Male Vietnam-era veterans are men who served in the Armed Forces between August 5, 1964 and May 7, 1975. Nonveterans are men who have never served in the Armed Forces; published data are limited to those 30 to 44 years of age, the group that most closely corresponds to the bulk of the Vietnam-era veteran population.

Table A-13. Employment status of the civilian population for eleven large States

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	May. 1987	Apr. 1988	May. 1988	May. 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988	May. 1988
California									
Civilian noninstitutional population	20,481	20,894	20,931	20,481	20,787	20,824	20,860	20,894	20,931
Civilian labor force	13,783	14,037	14,066	13,863	13,981	14,032	13,976	14,077	14,142
Employed	13,018	13,338	13,251	13,020	13,267	13,279	13,272	13,362	13,251
Unemployed	766	699	815	843	714	753	704	715	891
Unemployment rate	5.6	5.0	5.8	6.1	5.1	5.4	5.0	5.1	6.3
Florida									
Civilian noninstitutional population	9,398	9,628	9,648	9,398	9,568	9,588	9,609	9,628	9,648
Civilian labor force	5,879	6,035	6,104	5,863	5,993	6,013	6,066	6,093	6,086
Employed	5,581	5,731	5,816	5,548	5,698	5,695	5,771	5,773	5,780
Unemployed	297	304	288	315	295	318	295	320	306
Unemployment rate	5.1	5.0	4.7	5.4	4.9	5.3	4.9	5.3	5.0
Illinois									
Civilian noninstitutional population	8,732	8,773	8,776	8,732	8,764	8,767	8,770	8,773	8,776
Civilian labor force	5,719	5,684	5,731	5,719	5,795	5,839	5,749	5,746	5,733
Employed	5,251	5,263	5,336	5,262	5,407	5,401	5,330	5,332	5,352
Unemployed	469	421	395	457	388	438	419	414	381
Unemployment rate	8.2	7.4	6.9	8.0	6.7	7.5	7.3	7.2	6.6
Massachusetts									
Civilian noninstitutional population	4,585	4,599	4,600	4,585	4,597	4,598	4,599	4,599	4,600
Civilian labor force	3,063	3,135	3,106	3,081	3,142	3,147	3,190	3,163	3,124
Employed	2,960	3,044	3,022	2,972	3,036	3,041	3,096	3,072	3,036
Unemployed	103	92	84	109	106	106	94	91	88
Unemployment rate	3.4	2.9	2.7	3.5	3.4	3.4	2.9	2.9	2.8
Michigan									
Civilian noninstitutional population	6,922	6,981	6,986	6,922	6,966	6,972	6,977	6,981	6,986
Civilian labor force	4,520	4,511	4,507	4,508	4,472	4,530	4,488	4,556	4,498
Employed	4,151	4,171	4,212	4,140	4,018	4,149	4,117	4,220	4,205
Unemployed	369	340	295	368	454	381	371	336	293
Unemployment rate	8.2	7.5	6.5	8.2	10.2	8.4	8.3	7.4	6.5
New Jersey									
Civilian noninstitutional population	5,997	6,032	6,034	5,997	6,024	6,027	6,029	6,032	6,034
Civilian labor force	4,043	3,954	3,966	4,000	4,037	3,991	3,985	3,969	3,922
Employed	3,875	3,829	3,817	3,834	3,884	3,856	3,826	3,831	3,776
Unemployed	168	125	149	166	153	135	159	138	146
Unemployment rate	4.2	3.2	3.8	4.2	3.8	3.4	4.0	3.5	3.7
New York									
Civilian noninstitutional population	13,752	13,769	13,770	13,752	13,768	13,769	13,770	13,769	13,770
Civilian labor force	8,305	8,224	8,270	8,462	8,524	8,505	8,465	8,363	8,429
Employed	7,924	7,942	7,929	8,062	8,120	8,172	8,142	8,072	8,071
Unemployed	380	282	340	400	404	333	323	291	358
Unemployment rate	4.6	3.4	4.1	4.7	4.7	3.9	3.8	3.5	4.2
North Carolina									
Civilian noninstitutional population	4,800	4,869	4,875	4,800	4,852	4,858	4,864	4,869	4,875
Civilian labor force	3,231	3,252	3,291	3,235	3,291	3,300	3,296	3,300	3,297
Employed	3,096	3,142	3,182	3,094	3,135	3,180	3,171	3,177	3,183
Unemployed	135	109	109	141	156	120	125	123	114
Unemployment rate	4.2	3.4	3.3	4.4	4.7	3.6	3.8	3.7	3.5
Ohio									
Civilian noninstitutional population	8,149	8,190	8,194	8,149	8,181	8,184	8,188	8,190	8,194
Civilian labor force	5,275	5,257	5,243	5,277	5,330	5,355	5,369	5,277	5,248
Employed	4,903	4,941	4,941	4,884	4,983	5,013	4,958	4,945	4,922
Unemployed	372	316	302	393	347	342	411	332	326
Unemployment rate	7.1	6.0	5.8	7.4	6.5	6.4	7.7	6.3	6.2
Pennsylvania									
Civilian noninstitutional population	9,285	9,315	9,317	9,285	9,309	9,312	9,314	9,315	9,317
Civilian labor force	5,595	5,656	5,635	5,624	5,827	5,786	5,728	5,753	5,661
Employed	5,294	5,396	5,355	5,315	5,497	5,486	5,435	5,477	5,375
Unemployed	301	260	279	309	330	300	293	276	286
Unemployment rate	5.4	4.6	5.0	5.5	5.7	5.2	5.1	4.8	5.1
Texas									
Civilian noninstitutional population	12,017	12,058	12,061	12,017	12,050	12,053	12,056	12,058	12,061
Civilian labor force	8,337	8,235	8,334	8,376	8,255	8,306	8,252	8,334	8,372
Employed	7,620	7,658	7,729	7,658	7,595	7,610	7,582	7,711	7,770
Unemployed	718	577	605	718	660	696	670	623	602
Unemployment rate	8.6	7.0	7.3	8.6	8.0	8.4	8.1	7.5	7.2

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[1] These are the official Bureau of Labor Statistics' estimates used in the administration of Federal fund allocation programs.

[2] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and the seasonally adjusted columns.

Table B-1. Employees on nonagricultural payrolls by industry

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	May 1987	Mar. 1988	Apr. 1988 p	May 1988 p	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988 p	May 1988 p
Total	102,268	104,161	105,144	105,946	101,829	104,262	104,729	105,020	105,269	105,478
Total private	84,965	86,490	87,486	88,252	84,859	87,044	87,475	87,700	87,957	88,122
Goods-producing	24,650	24,812	25,180	25,451	24,653	25,180	25,271	25,330	25,438	25,446
Mining	712	723	731	733	716	728	731	733	739	737
Oil and gas extraction	393.8	414.7	416.2	416.3	401	414	415	419	423	423
Construction	5,012	4,787	5,083	5,286	4,967	5,083	5,150	5,192	5,240	5,234
General building contractors	1,311.3	1,290.6	1,348.0	1,390.2	1,316	1,365	1,377	1,383	1,401	1,396
Manufacturing	18,926	19,302	19,366	19,432	18,970	19,369	19,390	19,405	19,459	19,475
Production workers	12,890	13,165	13,210	13,268	12,923	13,225	13,249	13,251	13,279	13,301
Durable goods	11,159	11,377	11,431	11,469	11,159	11,393	11,404	11,411	11,458	11,470
Production workers	7,414	7,575	7,617	7,653	7,408	7,582	7,599	7,598	7,632	7,648
Lumber and wood products	737.3	734.9	742.3	756.4	738	754	756	755	757	757
Furniture and fixtures	511.4	534.4	535.1	534.7	514	536	535	534	536	537
Stone, clay, and glass products	586.0	571.0	584.1	588.5	581	583	584	585	587	583
Primary metal industries	746.1	774.6	775.7	777.7	743	768	770	772	773	775
Blast furnaces and basic steel products	269.3	280.5	280.7	281.5	265	279	280	281	281	281
Fabricated metal products	1,396.8	1,432.9	1,439.2	1,440.9	1,397	1,435	1,438	1,439	1,444	1,449
Machinery, except electrical	2,010.1	2,105.4	2,114.4	2,121.0	2,007	2,085	2,091	2,099	2,110	2,117
Electrical and electronic equipment	2,064.7	2,108.5	2,109.1	2,107.3	2,072	2,112	2,112	2,115	2,118	2,116
Transportation equipment	2,049.2	2,030.9	2,043.9	2,050.2	2,048	2,036	2,031	2,025	2,044	2,050
Motor vehicles and equipment	872.6	840.3	848.4	854.3	869	839	837	835	848	852
Instruments and related products	692.2	704.7	704.7	705.8	693	704	705	705	705	707
Miscellaneous manufacturing	365.6	379.9	382.2	378.9	366	380	382	382	384	379
Nondurable goods	7,767	7,925	7,935	7,963	7,811	7,976	7,986	7,994	8,001	8,005
Production workers	5,476	5,590	5,593	5,615	5,515	5,643	5,650	5,653	5,647	5,653
Food and kindred products	1,578.3	1,589.6	1,590.4	1,601.0	1,618	1,647	1,649	1,647	1,640	1,640
Tobacco manufactures	51.5	52.1	50.4	49.7	55	55	54	54	54	53
Textile mill products	721.3	720.0	726.1	728.9	721	732	732	729	727	728
Apparel and other textile products	1,098.4	1,104.4	1,102.1	1,102.5	1,095	1,105	1,104	1,106	1,100	1,099
Paper and allied products	675.6	683.8	684.1	686.8	678	685	686	687	688	689
Printing and publishing	1,499.9	1,548.4	1,555.7	1,554.5	1,501	1,538	1,544	1,548	1,554	1,556
Chemicals and allied products	1,017.6	1,050.2	1,051.9	1,057.3	1,020	1,047	1,049	1,052	1,055	1,059
Petroleum and coal products	165.7	161.9	164.2	166.1	165	166	165	164	165	165
Rubber and miscellaneous plastics products	816.2	861.0	865.3	870.3	816	854	856	860	864	870
Leather and leather products	142.6	145.3	145.1	146.2	142	147	147	147	146	146
Service-producing	77,618	79,349	79,964	80,495	77,176	79,082	79,458	79,690	79,831	80,032
Transportation and public utilities	5,358	5,473	5,510	5,564	5,356	5,499	5,513	5,530	5,542	5,561
Transportation	3,149	3,239	3,274	3,320	3,143	3,261	3,272	3,285	3,297	3,313
Communication and public utilities	2,209	2,234	2,236	2,244	2,213	2,238	2,241	2,245	2,245	2,248
Wholesale trade	5,835	6,016	6,065	6,108	5,841	6,010	6,035	6,061	6,089	6,113
Durable goods	3,422	3,573	3,602	3,629	3,422	3,555	3,573	3,591	3,609	3,629
Nondurable goods	2,413	2,443	2,463	2,479	2,419	2,455	2,462	2,470	2,480	2,484
Retail trade	18,413	18,612	18,873	19,128	18,417	18,927	19,045	19,050	19,083	19,128
General merchandise stores	2,337.5	2,436.0	2,445.6	2,468.4	2,412	2,526	2,561	2,543	2,542	2,547
Food stores	2,943.9	3,001.3	3,011.1	3,042.5	2,957	3,014	3,029	3,044	3,045	3,055
Automotive dealers and service stations	1,999.2	2,034.1	2,053.7	2,070.1	1,994	2,038	2,047	2,055	2,062	2,064
Eating and drinking places	6,196.4	6,142.5	6,313.3	6,450.2	6,092	6,260	6,291	6,319	6,326	6,336
Finance, insurance, and real estate	6,539	6,599	6,627	6,640	6,539	6,633	6,636	6,651	6,649	6,639
Finance	3,267	3,293	3,292	3,289	3,273	3,308	3,305	3,306	3,302	3,296
Insurance	2,016	2,058	2,063	2,065	2,017	2,052	2,053	2,060	2,065	2,065
Real estate	1,256	1,248	1,272	1,286	1,249	1,273	1,278	1,285	1,282	1,278
Services	24,170	24,970	25,231	25,361	24,053	24,795	24,975	25,078	25,156	25,235
Business services	5,149.6	5,345.4	5,378.6	5,423.8	5,158	5,321	5,385	5,405	5,417	5,435
Health services	6,767.7	7,081.4	7,111.0	7,151.7	6,778	7,019	7,056	7,088	7,125	7,159
Government	17,303	17,671	17,658	17,694	16,970	17,218	17,254	17,320	17,312	17,356
Federal	2,947	2,964	2,968	2,966	2,936	2,973	2,972	2,970	2,968	2,954
State	4,010	4,140	4,149	4,124	3,954	4,006	4,014	4,031	4,040	4,067
Local	10,346	10,567	10,541	10,604	10,080	10,239	10,268	10,319	10,304	10,335

p = preliminary.

NOTE: Data have been revised to reflect March 1987 benchmarks and updated seasonal adjustment factors.

Table B-2. Average weekly hours of production or nonsupervisory workers[1] on private nonagricultural payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted					
	May 1987	Mar. 1988	Apr. 1988 p	May 1988 p	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988 p	May 1988 p
Total private	34.8	34.4	34.7	34.6	34.9	34.7	34.9	34.6	34.9	34.7
Mining	42.4	41.9	42.8	42.4	(2)	(2)	(2)	(2)	(2)	(2)
Construction	38.5	37.4	37.9	38.4	(2)	(2)	(2)	(2)	(2)	(2)
Manufacturing	40.9	40.9	41.0	41.0	41.0	41.1	41.0	40.9	41.2	41.1
Overtime hours	3.6	3.6	3.7	3.8	3.9	3.9	3.7	3.7	4.0	4.0
Durable goods	41.5	41.6	41.7	41.8	41.6	41.6	41.5	41.5	41.9	41.9
Overtime hours	3.6	3.9	4.0	4.0	3.8	4.0	3.9	3.8	4.2	4.2
Lumber and wood products	41.3	39.9	40.6	40.5	40.9	40.2	40.3	40.1	40.6	40.1
Furniture and fixtures	39.6	39.0	39.1	38.9	40.0	39.6	39.5	39.3	39.5	39.3
Stone, clay, and glass products	42.8	42.0	42.5	42.8	42.3	42.0	42.3	42.3	42.5	42.3
Primary metal industries	42.9	43.4	43.4	43.6	42.9	43.4	43.1	43.3	43.4	43.7
Blast furnaces and basic steel products	43.0	43.7	43.8	43.9	43.0	44.0	43.8	43.7	43.6	43.9
Fabricated metal products	41.3	41.6	41.7	41.9	41.5	41.9	41.6	41.6	42.0	42.1
Machinery, except electrical	42.0	42.7	42.6	42.4	42.2	42.7	42.6	42.5	42.8	42.6
Electrical and electronic equipment	40.6	40.9	40.8	40.8	40.9	41.1	40.9	40.9	41.2	41.1
Transportation equipment	42.2	42.5	42.9	43.1	42.2	42.0	42.0	42.1	43.0	43.1
Motor vehicles and equipment	42.5	43.0	44.1	44.6	42.3	42.1	42.3	42.3	44.1	44.3
Instruments and related products	41.2	41.6	41.4	41.2	41.4	41.8	41.3	41.4	41.7	41.4
Miscellaneous manufacturing	39.2	39.2	39.1	39.1	39.4	39.1	39.3	39.2	39.4	39.3
Nondurable goods	40.2	40.0	39.9	40.0	40.3	40.3	40.2	40.1	40.3	40.0
Overtime hours	3.5	3.4	3.4	3.5	3.7	3.8	3.6	3.6	3.6	3.7
Food and kindred products	40.1	39.6	39.6	40.2	40.1	40.6	40.3	40.1	40.2	40.2
Tobacco manufactures	39.3	39.3	38.6	39.6	(2)	(2)	(2)	(2)	(2)	(2)
Textile mill products	41.9	41.0	41.0	40.6	42.0	41.5	41.6	41.2	41.6	40.9
Apparel and other textile products	37.1	37.0	36.8	36.8	37.1	36.8	37.0	37.0	37.4	36.9
Paper and allied products	43.3	42.9	43.1	43.1	43.5	43.4	43.3	43.2	43.4	43.3
Printing and publishing	37.8	38.2	38.0	37.6	38.0	38.1	38.1	38.1	38.2	37.8
Chemicals and allied products	42.2	42.5	42.2	42.0	42.2	42.5	42.4	42.5	42.2	42.0
Petroleum and coal products	44.0	43.7	44.1	44.3	(2)	(2)	(2)	(2)	(2)	(2)
Rubber and miscellaneous plastics products	41.6	41.7	41.7	41.5	41.7	41.7	41.6	41.7	41.9	41.6
Leather and leather products	38.7	37.4	36.8	37.8	38.4	38.0	37.8	37.9	37.1	37.5
Transportation and public utilities	39.1	38.6	38.9	38.8	39.3	39.5	39.1	38.8	39.2	39.0
Wholesale trade	38.3	37.9	38.2	38.1	38.3	38.1	38.2	38.1	38.3	38.1
Retail trade	29.2	28.6	28.9	29.0	29.3	29.0	29.1	29.0	29.2	29.1
Finance, insurance, and real estate	36.3	35.8	36.2	35.7	(2)	(2)	(2)	(2)	(2)	(2)
Services	32.4	32.3	32.6	32.4	32.5	32.6	32.7	32.4	32.7	32.5

[1] Data relate to production workers in mining and manufacturing; to construction workers in construction; and to nonsupervisory workers in transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. These groups account for approximately four-fifths of the total employees on private nonagricultural payrolls.

[2] This series is not published seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separated with sufficient precision.

p = preliminary.

NOTE: Data have been revised to reflect March 1987 benchmarks and updated seasonal adjustment factors.

Table B-3. Average hourly and weekly earnings of production or nonsupervisory workers[1] on private nonagricultural payrolls by industry

Industry	Average hourly earnings				Average weekly earnings			
	May 1987	Mar. 1988	Apr. 1988 p	May 1988 p	May 1987	Mar. 1988	Apr. 1988 p	May 1988 p
Total private	$8.93	$9.18	$9.22	$9.26	$310.76	$315.79	$319.93	$320.40
Seasonally adjusted	8.95	9.16	9.22	9.28	311.46	316.94	321.78	322.02
Mining	12.50	12.59	12.58	12.53	530.00	527.52	538.42	531.27
Construction	12.66	12.87	12.85	12.87	487.41	481.34	487.02	494.21
Manufacturing	9.87	10.07	10.11	10.14	403.68	411.08	414.51	415.74
Durable goods	10.38	10.59	10.65	10.67	430.77	440.54	444.11	446.01
Lumber and wood products	8.37	8.45	8.49	8.55	345.68	337.16	344.69	346.28
Furniture and fixtures	7.63	7.76	7.81	7.87	302.15	302.64	305.37	306.14
Stone, clay, and glass products	10.26	10.36	10.40	10.45	439.13	435.12	442.00	447.26
Primary metal industries	11.92	12.07	12.12	12.14	510.18	523.84	526.01	529.30
Blast furnaces and basic steel products	13.73	13.89	13.96	13.99	590.39	606.99	611.45	614.16
Fabricated metal products	9.94	10.14	10.22	10.23	410.52	421.82	426.17	428.64
Machinery, except electrical	10.63	10.84	10.88	10.91	446.46	462.87	463.49	462.58
Electrical and electronic equipment	9.81	10.04	10.09	10.11	398.29	410.64	411.67	412.49
Transportation equipment	12.95	13.20	13.29	13.29	542.27	561.00	570.14	572.80
Motor vehicles and equipment	13.43	13.93	14.10	14.07	570.78	598.99	621.81	627.52
Instruments and related products	9.66	9.88	9.87	9.91	397.99	411.01	408.62	408.29
Miscellaneous manufacturing	7.74	7.91	7.91	7.98	303.41	310.07	309.28	312.02
Nondurable goods	9.14	9.33	9.36	9.39	367.43	373.20	373.46	375.60
Food and kindred products	8.99	9.07	9.12	9.13	360.50	359.17	361.15	367.03
Tobacco manufactures	14.60	14.42	14.99	15.29	573.78	566.71	578.61	605.48
Textile mill products	7.12	7.31	7.35	7.32	298.33	299.71	301.35	298.66
Apparel and other textile products	5.87	6.03	6.04	6.06	217.78	223.11	222.27	223.01
Paper and allied products	11.41	11.52	11.59	11.68	494.05	494.21	499.53	503.41
Printing and publishing	10.19	10.45	10.40	10.45	385.18	399.19	395.20	392.92
Chemicals and allied products	12.32	12.53	12.56	12.64	519.90	532.53	530.03	530.88
Petroleum and coal products	14.54	14.98	15.02	14.93	639.76	654.63	662.38	661.40
Rubber and miscellaneous plastics products	8.86	9.00	9.03	9.05	368.58	375.30	376.55	375.58
Leather and leather products	6.05	6.23	6.29	6.28	234.14	233.00	231.47	237.38
Transportation and public utilities	11.93	12.19	12.17	12.18	466.46	470.53	473.41	472.58
Wholesale trade	9.56	9.78	9.88	9.88	366.15	370.66	377.42	376.43
Retail trade	6.09	6.24	6.25	6.27	177.83	178.46	180.63	181.83
Finance, insurance, and real estate	8.72	8.97	9.05	9.17	316.54	321.13	327.61	327.37
Services	8.40	8.80	8.82	8.87	272.16	284.24	287.53	287.39

[1] See footnote 1, table B-2.
p = preliminary.

NOTE: Data have been revised to reflect March 1987 benchmarks and updated seasonal adjustment factors.

Table B-4. Hourly Earnings Index for production or nonsupervisory workers[1] on private nonagricultural payrolls by industry

(1977 = 100)

Industry	Not seasonally adjusted					Seasonally adjusted						
	May 1987	Mar. 1988	Apr. 1988p	May 1988p	Percent change from: May 1987- May 1988	May 1987	Jan. 1988	Feb. 1988	Mar. 1988	Apr. 1988p	May 1988p	Percent change from: Apr. 1988- May 1988
Total private nonfarm:												
Current dollars	172.8	177.2	178.0	178.7	3.4	172.9	176.6	176.7	177.0	177.8	178.8	0.5
Constant (1977) dollars	94.1	93.8	93.7	N.A.	(2)	94.0	93.8	93.7	93.5	93.5	N.A.	(3)
Mining	181.5	183.6	184.2	184.0	1.4	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Construction	154.8	156.7	157.0	157.6	1.8	154.8	157.6	156.8	157.5	157.5	157.6	.1
Manufacturing	174.4	177.7	178.2	178.5	2.4	174.2	176.8	177.0	177.3	177.8	178.4	.3
Transportation and public utilities	174.9	179.2	179.1	179.4	2.5	176.0	178.3	179.1	179.4	179.5	180.5	.6
Wholesale trade	176.7	180.4	182.3	182.4	3.3	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Retail trade	160.7	163.9	164.9	165.6	3.1	160.3	163.4	163.4	163.8	164.6	165.3	.4
Finance, insurance, and real estate	187.0	193.4	195.8	197.4	5.6	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Services	179.7	187.6	188.4	190.0	5.8	180.0	186.5	186.3	186.9	188.2	190.4	1.2

[1] See footnote 1, table B-2.

[2] Change is -.7 percent from April 1987 to April 1988, the latest month available.

[3] Change is less than .05 percent from March 1988 to April 1988, the latest month available.

[4] These series are not seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separated with sufficient precision.

N.A. Data not available.
p = preliminary.

NOTE: Data have been revised to reflect March 1987 benchmarks and updated seasonal adjustment factors.

Table B-5. Indexes of aggregate weekly hours of production or nonsupervisory workers[1] on private nonagricultural payrolls by industry

(1977 = 100)

Industry	Not seasonally adjusted: May 1987	Not seasonally adjusted: Mar. 1988	Not seasonally adjusted: Apr. 1988 p	Not seasonally adjusted: May 1988 p	Seasonally adjusted: May 1987	Seasonally adjusted: Jan. 1988	Seasonally adjusted: Feb. 1988	Seasonally adjusted: Mar. 1988	Seasonally adjusted: Apr. 1988 p	Seasonally adjusted: May 1988 p
Total	120.5	121.0	123.5	124.5	120.4	123.0	123.9	123.6	125.0	124.5
Goods-producing	99.0	98.6	100.8	102.5	98.7	100.5	101.1	101.6	102.7	102.2
Mining	80.0	81.1	84.0	83.4	80.0	81.7	82.5	83.2	86.0	84.1
Construction	136.9	124.3	135.6	143.0	133.0	132.1	136.0	139.1	141.1	139.0
Manufacturing	92.5	94.5	94.9	95.4	92.9	95.2	95.2	95.2	96.1	95.8
Durable goods	90.3	92.5	93.3	93.9	90.4	92.7	92.7	92.7	94.0	94.0
Lumber and wood products	103.8	99.4	102.3	104.3	103.0	103.0	103.6	103.1	104.5	103.6
Furniture and fixtures	108.4	111.6	112.0	111.2	110.3	113.7	113.2	112.3	113.2	113.4
Stone, clay, and glass products	88.4	84.4	87.7	89.0	86.3	86.5	87.3	87.5	88.3	86.9
Primary metal industries	63.0	67.4	67.6	68.1	63.0	66.5	66.4	66.9	67.4	68.1
Blast furnaces and basic steel products	49.9	54.1	54.3	54.6	49.2	53.9	53.9	54.1	54.3	54.6
Fabricated metal products	87.1	90.4	91.1	92.2	87.4	90.9	90.8	90.8	91.9	92.7
Machinery, except electrical	84.6	91.2	91.4	91.5	84.8	90.0	90.2	90.4	91.6	91.6
Electrical and electronic equipment	98.5	101.0	101.5	101.4	99.6	102.2	101.0	101.9	102.9	102.5
Transportation equipment	99.9	98.4	99.0	100.8	99.5	97.5	97.3	96.0	99.0	100.3
Motor vehicles and equipment	89.6	87.1	90.2	91.0	88.6	84.7	85.7	84.0	89.8	90.6
Instruments and related products	101.4	105.9	105.5	105.4	102.0	106.0	105.0	105.2	106.3	106.1
Miscellaneous manufacturing	80.4	83.5	84.0	83.3	81.0	83.4	84.0	84.5	85.3	83.9
Nondurable goods	95.8	97.3	97.2	97.7	96.7	99.0	99.0	98.0	99.1	98.5
Food and kindred products	95.5	95.0	94.9	97.3	98.9	102.2	101.7	100.9	101.1	100.5
Tobacco manufactures	69.9	71.4	66.0	67.0	76.3	77.2	75.0	74.8	74.0	73.0
Textile mill products	81.9	81.1	80.0	80.7	82.2	82.5	82.7	81.7	82.2	80.9
Apparel and other textile products	85.3	85.5	85.0	85.0	85.0	85.1	85.5	85.7	86.2	84.6
Paper and allied products	99.8	100.1	100.4	101.2	100.6	101.6	101.5	101.3	101.8	101.9
Printing and publishing	129.7	136.2	136.3	134.5	130.3	134.9	135.5	136.0	136.5	134.9
Chemicals and allied products	93.7	97.7	97.1	97.3	93.9	97.4	97.1	97.9	97.3	97.5
Petroleum and coal products	85.3	81.2	83.5	85.6	85.3	86.3	84.5	83.5	84.3	84.9
Rubber and miscellaneous plastics products	115.1	122.0	122.6	122.7	115.3	120.9	121.0	121.0	122.6	123.0
Leather and leather products	57.2	55.7	54.7	56.0	56.7	57.5	57.2	56.9	55.2	56.3
Service-producing	132.3	133.3	136.0	136.6	132.4	135.5	136.4	135.0	137.3	136.7
Transportation and public utilities	108.4	109.4	111.1	112.0	109.0	112.6	111.8	111.2	112.7	112.5
Wholesale trade	118.9	121.7	123.0	124.4	119.0	122.2	123.1	123.6	124.0	126.0
Retail trade	121.9	119.9	123.3	125.0	122.2	124.0	125.2	124.0	126.0	125.5
Finance, insurance, and real estate	141.2	138.2	140.3	138.9	141.5	141.3	141.6	139.6	141.0	139.3
Services	152.0	156.1	158.9	158.0	151.6	156.5	158.0	157.2	159.0	158.4

[1] See footnote 1, table B-2.

p = preliminary

NOTE: Data have been revised to reflect March 1987 benchmarks and updated seasonal adjustment factors.

Table B-6. Indexes of diffusion: Percent of industries in which employment[1] increased

Time span	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span	1986	57.0	47.3	49.5	50.0	51.9	46.0	51.9	54.1	[illegible]	53.0	58.9	58.9
	1987	58.0	59.2	61.1	62.4	62.4	61.6	70.0	62.2	60.1	67.3	67.0	68.4
	1988	61.6	61.6	62.2	p62.7	p56.2							
Over 3-month span	1986	50.0	47.6	45.7	46.2	46.2	46.2	48.1	51.9	[illegible]	55.9	59.7	59.2
	1987	57.6	57.0	65.1	69.2	68.1	71.9	73.0	76.0	74.1	76.5	78.1	73.0
	1988	71.6	66.0	p66.0	p64.1								
Over 6-month span	1986	48.1	47.3	43.0	42.7	43.2	47.0	46.5	50.0	55.9	53.2	55.9	58.4
	1987	64.6	64.3	63.0	70.3	72.4	77.3	78.4	[illegible]	82.7	77.0	77.0	76.5
	1988	p73.2	p67.6										
Over 12-month span	1986	42.2	41.6	43.0	44.9	45.7	48.6	46.0	48.6	51.6	53.0	56.5	57.0
	1987	63.0	67.3	69.5	73.5	76.0	76.0	78.9	78.9	79.7	p77.0	p77.0	
	1988												

[1] Number of employees, seasonally adjusted for 1, 3, and 6 month spans, on payrolls of 185 private nonagricultural industries. Data for the 12-month span are unadjusted.

p = preliminary

NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components are counted as rising.) Data are centered within the spans. Data have been revised to reflect March 1987 benchmarks and updated seasonal adjustment factors.

Representative **Hamilton**. Thank you very much.

Let's begin with where you left off with respect to part-time and temporary employment. I must say I am impressed rather repeatedly with the number of people I encounter, part-time workers who want full-time work, full-time workers who want better jobs, and temporary workers who want permanent jobs. Looking back on my own experience, it seems to me that I get that kind of impression more and more frequently.

Is it true that we have a lot more part-time workers out there now than we used to have? Are we getting a sharp increase in part-time workers in the American working force?

Mrs. **Norwood**. We have many more there now than we had in the 1950's, but the big growth of part-time workers occurred in the 1960's and 1970's as a lot of women moved into the labor force, some of them looking for part-time jobs, and as we had the baby-boom generation growing up, some of them combining school with work. We have had some continued increase in the 1980's, but except for one component—those who are working part time but really want full-time jobs—the very large growth in part-time workers was in the 1960's and the 1970's. That part-time-for-economic-reasons group went way up during the 1981–82 recession. It has come down during the recovery, and this month we have reported another drop. But it is still higher than we would like it to be.

Representative **Hamilton**. Do you keep track of the benefits that part-time employees get? Apparently you do, according to some of your statements this morning.

Mrs. **Norwood**. The survey that I reported on this morning provides information on earnings and benefits in business establishments that supply temporary workers to the rest of the economy. For part-time workers we have some data that come out of our household survey, but not on benefits.

Representative **Hamilton**. How would their fringe benefits, for example, compare with the fringe benefits of a permanent worker?

Mrs. **Norwood**. We are not certain about that. I believe that they are getting less in the way of fringe benefits. But many of them are eligible for fringes, depending on the number of hours that they work. It is certainly true of the temporary help industry and is true for some part-time workers.

Representative **Hamilton**. In looking at your figures, I am particularly impressed that health-care benefits are available to only one-fourth of the temporary workers. Do you have any estimates of the cost to an employer hiring part-time to full-time workers?

Mrs. **Norwood**. No, we don't.

Representative **Hamilton**. We have a fewer number of young people coming into the work force. That is correct, is it not?

Mrs. **Norwood**. That is correct.

Representative **Hamilton**. That is because of demographics, I presume.

Mrs. **Norwood**. There are fewer of them.

Representative **Hamilton**. Will the fact that you have fewer young people coming into the work force mean that they will come in at lower wages, or will it make much difference with respect to the wages they get?

Mrs. **Norwood**. I would think that it might mean the opposite. There might be somewhat higher wages because there would be fewer people available for the kinds of jobs that teenagers have had in the past. In fact, we have found that many people in the fast food industry and in other parts of the retail trade industry have begun orienting their recruitment activities toward older workers because there are just too few teenagers. And, they have raised wages to recruit teenagers and other workers.

Representative **Hamilton**. What percentage of the young people come in at a minimum wage?

Mrs. **Norwood**. I can supply that for the record. We have it. I don't have it here.

[The following information was subsequently supplied for the record:]

Table 1. Employed wage and salary workers paid at hourly rates with earnings at or below the prevailing minimum wage, by selected characteristics, 1987 annual averages

Characteristic	Number of workers (in thousands)				Percent distribution				Percent of all workers paid at hourly rates		
	Total paid at hourly rates	At or below $3.35			Total paid at hourly rates	At or below $3.35			At or below $3.35		
		Total	At $3.35	Below $3.35		Total	At $3.35	Below $3.35	Total	At $3.35	Below $3.35
SEX AND AGE											
Total, 16 years and over	59,552	4,597	3,229	1,468	100.0	100.0	100.0	100.0	7.9	5.4	2.5
16 to 24 years	15,725	2,688	1,958	730	26.4	57.2	60.6	49.7	17.1	12.5	4.6
16 to 19 years	5,954	1,706	1,272	434	10.0	36.3	39.4	29.6	28.7	21.4	7.3
25 years and over	43,827	2,009	1,271	738	73.6	42.8	39.4	50.3	4.6	2.9	1.7
Men, 16 years and over	30,474	1,647	1,283	364	51.2	35.1	39.7	24.8	5.4	4.2	1.2
16 to 24 years	8,140	1,115	910	205	13.7	23.7	28.2	14.0	13.7	11.2	2.5
16 to 19 years	2,982	738	611	127	5.0	15.7	18.9	8.7	24.7	20.5	4.3
25 years and over	22,335	531	373	158	37.5	11.3	11.6	10.8	2.4	1.7	0.7
Women, 16 years and over	29,078	3,051	1,946	1,105	48.8	65.0	60.3	75.3	10.5	6.7	3.8
16 to 24 years	7,586	1,574	1,049	525	12.7	33.5	32.5	35.8	20.7	13.8	6.9
16 to 19 years	2,972	968	660	308	5.0	20.6	20.4	21.0	32.6	22.2	10.4
25 years and over	21,492	1,478	898	580	36.1	31.5	27.8	39.5	6.9	4.2	2.7
RACE, HISPANIC ORIGIN, AND SEX											
White	50,180	3,909	2,598	1,311	84.3	83.2	80.5	89.3	7.8	5.2	2.6
Men	25,801	1,327	1,024	303	43.3	28.3	31.7	20.6	5.1	4.0	1.2
Women	24,379	2,581	1,573	1,008	40.9	54.9	48.7	68.7	10.5	6.5	4.1
Black	7,667	670	547	122	12.9	14.3	16.9	8.4	8.7	7.1	1.6
Men	3,842	271	223	48	6.5	5.8	6.9	3.3	7.1	5.8	1.2
Women	3,825	399	324	75	6.4	8.5	10.0	5.1	10.4	8.5	2.0
Hispanic origin	5,155	416	342	74	8.7	8.9	10.6	5.0	8.1	6.6	1.4
Men	3,126	206	172	34	5.2	4.4	5.3	2.3	6.6	5.5	1.1
Women	2,029	210	170	40	3.4	4.5	5.3	2.7	10.3	8.4	2.0
FULL- AND PART-TIME STATUS AND SEX											
Full-time workers	44,462	1,594	1,089	505	74.7	33.9	23.7	34.4	3.6	2.4	1.1
Men	25,810	609	459	150	43.3	13.0	14.2	10.2	2.4	1.8	0.6
Women	18,652	985	630	355	31.3	21.0	19.5	24.2	5.3	3.4	1.9
Part-time workers	15,090	3,103	2,140	963	25.3	66.1	66.3	65.6	20.6	14.2	6.4
Men	4,664	1,037	823	214	7.8	22.1	25.5	14.6	22.2	17.6	4.6
Women	10,426	2,067	1,317	750	17.5	44.0	40.8	51.1	19.8	12.6	7.2

NOTE: Data exclude the incorporated self-employed.

Representative **Hamilton**. Do you look into the question, which is kind of a hot one around here now as we look at minimum wage legislation, of what the impact of an increase in the minimum wage may be with regard to jobs lost?

Mrs. **Norwood**. We have not done any work on that ourselves. We have, however, done a review of all of the empirical studies that have been done.

Representative **Hamilton**. Do you want to give me your conclusions?

Mrs. **Norwood**. Basically, those studies have found that the employment impact is concentrated on teenagers. The studies generally found little of any disemployment effects on adult workers.

Representative **Hamilton**. What is the employment impact on the teenagers?

Mrs. **Norwood**. A 10-percent change in the minimum wage has about a 1-percent effect on employment.

I could supply a paragraph for the record on that, but that is about what it comes out to. And this is based on a whole group of studies.

Representative **Hamilton**. I am not sure I understand. What does a 10-percent change mean?

Mrs. **Norwood**. A 10-percent change in the minimum wage would have a disemployment effect for teenagers of about 1 percent.

Representative **Hamilton**. One percent of the teenagers would lose their jobs; is that it?

Mrs. **Norwood**. I am not saying that that would be the case. That is what some of these studies indicate.

Representative **Hamilton**. I do not know if you have any information on inflation for us this morning. Do you?

Mrs. **Norwood**. We do not have anything particularly new. We do have the Consumer and Producer Price Indexes as well as Export and Import Price Indexes.

Representative **Hamilton**. The Consumer Price Index and the Producer Price Index have gone up at an annual rate of close to 6 percent; is that right?

Mr. **Dalton**. In the very recent past.

Representative **Hamilton**. Does that represent a worrisome increase in inflation for us?

Mr. **Dalton**. I do not believe so. The figure we just talked about was in the Finished Goods Index. A lot of that increase was due to increases in energy prices and some in food prices.

Representative **Hamilton**. Some of us around here can remember the day when 3 or 4 percentage points used to get us pretty nervous.

Mr. **Dalton**. That is correct.

Representative **Hamilton**. Times have changed a little bit; is that it?

Mr. **Dalton**. Quite a bit.

Representative **Hamilton**. I can remember when we had 3 or 4 percentage points and we had wage and price controls, didn't we?

Mr. **Dalton**. That is correct, in 1971.

Mrs. **Norwood**. I think what we are seeing is, as always, that the indexes are very much affected by food prices and by energy prices either going up or down. There is some evidence in the intermediate goods index of the producer price program of a little heating up of prices, but still nothing that is of very great concern. We would hope that would not continue.

Representative HAMILTON. How does the payroll job growth of 200,000 in May and 240,000 in April compare with the average monthly increase during the previous year?

Mrs. NORWOOD. It is a little slower.

Representative HAMILTON. Does that represent a slowdown in the growth of the economy?

Mrs. NORWOOD. The average monthly increase in payroll jobs was just under 300,000. Over the last 3 months we had 290,000, 240,000, and now 209,000. So there is some moderation from earlier in the year. Clearly these data have an important effect on the national accounts, but I think it is too early to conclude that there is much more than just some moderation in employment growth.

Representative HAMILTON. From those figures you would not draw the conclusion that we are going to have indicators showing a slowdown in the second quarter, for example, on the GNP figures. That does not signal that kind of a change necessarily, does it?

Mrs. NORWOOD. No. I do not see this as a signaling. I think that this month's employment report is something that many people in the financial markets will find is somewhat favorable since it shows that we are continuing to grow but at a somewhat more moderate rate.

Representative HAMILTON. Thank you.

Congresswoman Snowe.

Representative SNOWE. Thank you, Mr. Vice Chairman.

Mrs. Norwood, do you expect the slight increase in unemployment for May would be a trend of any sort?

Mrs. NORWOOD. I would hope not.

Representative SNOWE. Is there any way to discern that at this point?

Mrs. NORWOOD. I do not think so. I think the household survey this month is very much affected by the technical problems that occur when we get into the summer months. It is very hard to develop seasonal adjustment when there is a lot of movement in the labor force. We have found in the past that when we have had a month of May like this it is usually followed by a strong month of June or July, because the timing of the summer employment expansion for young people varies by year. I have said in my statement that I believe that we should not focus on the household survey this month but rather on the establishment survey, which is showing continued but moderate growth.

Representative SNOWE. You mention in your statement the May employment rise was 300,000, very low by historical standards. Is it the lowest in 10 years? What is the benchmark?

Mrs. NORWOOD. It was 1.3 million last year. I do not have the specifics of that, but I do know that in 2 of the last 5 years we had this kind of situation and it was followed in each of those cases by a fairly sizable increase either in June or in July.

Representative SNOWE. You also mention in your statement that you continue to be concerned about the one-quarter of the part timers who would prefer full-time work. Is there any way of breaking that down by region? Is this a regional problem? Is there any one section of the country that has this problem more than others?

Mrs. NORWOOD. We have not done that. I suppose that we could, although the number is fairly small for that purpose. It is generally disproportionately female, disproportionately black. It went up a great deal in the recession. It has come down a great deal in the recovery. I think it is quite a good thing to see it coming down still further. But involuntary part-time employment is an area that we do need to be concerned about.

Representative SNOWE. In what sector of the economy was the loss of jobs for May?

Mrs. NORWOOD. I am not sure there was a loss of jobs in May.

Representative SNOWE. In general. What sector for May?

Mrs. NORWOOD. I think what happened is from March to April the household survey showed an improvement in employment; from April to May it showed a disimprovement. I believe that probably not a great deal happened over that period. I think that it is better to look at the payroll employment and find that what is happening is continued growth in services, lesser growth in manufacturing.

Representative SNOWE. Is it possible to glean from the household survey the number of women who otherwise would be working if they did not have a problem with childcare?

Mrs. NORWOOD. Not really. We do ask some questions of people who are out of the labor force and we get some information about why they are not in the labor force. It may be childcare; it may be that they have difficulties at home that prevent them from coming into the labor force. We also have a good deal of information, of course, on the numbers of working mothers with youngsters at all income levels. Childcare is not a particular problem for one income group versus another. It is a different problem for each group of the population that is affected.

Representative SNOWE. Is this information that your Bureau could ascertain? I think it would be helpful to measure this problem in this context, considering the issue of childcare overall. You have a number of part-time workers. Many of them obviously would like to work full time. Some do not. I wonder to what extent the childcare problem becomes relevant to women given the increasing number of women entering the work force to begin with, and second, many of them are part-time workers voluntarily and then some involuntarily. I just wonder if this becomes an issue at all in the context of that decision.

Mrs. NORWOOD. I think it is clearly an issue. I have given a lot of thought to the question of how to survey to find out. I do not think it would be very easy to do. For example, each person's view of quality childcare may be very different. There are financial problems. Those are measurable. When you get into the availability of childcare, the availability, for example, of relatives, that is fairly easy to look at. But the availability of effective childcare of high quality is something that we in the data system call rather soft. It is very hard to measure.

Representative SNOWE. You also mentioned in your testimony last month about the gender gap in earnings. What is it at the current time?

Mrs. NORWOOD. We have two series. The series that I prefer to use is the usual weekly earning series. In 1979 that was at 62 percent. It is slightly higher than the other series. When we began it, it started at 62 percent. It is now up to 69 percent. There is still a considerable gap, but there has been a good bit of improvement, particularly in recent years as the economy has expanded.

Representative SNOWE. The Commerce Department recently revised upward the GNP figures. How does that interface with unemployment as you see it?

Mrs. NORWOOD. It really goes the other way around. That is, the employment figures are inputs into the gross national product accounts as are the price data as well. What they have done is gone back over the past. The fact that we have benchmarked our data and have showed we were underestimating employment somewhat, not a great deal, but nevertheless underestimating somewhat, certainly will have an effect on both the GNP accounts and the industrial production index.

Representative SNOWE. Given your estimates for unemployment, do you think these projections are realistic for growth?

Mrs. NORWOOD. We have had greater growth than the Council of Economic Advisers projections had expected. Now we are seeing a little bit more moderate growth. So, it is hard to know where we will come out.

Representative SNOWE. Thank you.

Representative HAMILTON. Congressman Solarz.

Representative SOLARZ. Thank you very much, Mr. Vice Chairman.

Mrs. Norwood, it is good to see you again.

Do you have any judgment about how much lower the unemployment rate can go before it begins to generate upward pressure on inflation?

Mrs. NORWOOD. No, I don't. We have discussed that many times before. I think there is some evidence of shortages in some parts of the country and some industries, but I do not see any overall shortage, and we are not seeing in our price indexes yet any evidence of considerable upward pressure.

I think the other point that needs to be made is that wages are not shooting up, and that is usually the first indicator of inflationary increases. Our wage data, our employment cost index, for example—which I think is the best measure for that, particularly if you include the employer's cost of compensation—is still rising at slightly under 4 percent a year. That is not evidence of heating up of inflation.

Representative SOLARZ. I gather it would be your judgment that the unemployment rate could go down somewhat, although you do not know exactly by how much, before there would be upward pressure on the Consumer Price Index, for example, or other inflation indicators.

Mrs. NORWOOD. Probably so.

Representative SOLARZ. Could you possibly tell us, if you can recall offhand, what percentage of the total number of jobs in the country come from manufacturing and to what extent that has declined over the course of the last 5 to 10 years? Do you know that?

Mrs. Norwood. We now have less than 1 in every 4 workers in manufacturing. It has declined considerably in recent decades. I can tell you that we are now, for example, at about 19.5 million people who are working in manufacturing. We have only recovered about 60 percent of the jobs lost in 1981–82 from manufacturing.

Nevertheless, our production in manufacturing is doing fairly well. So our output is increasing.

Representative Solarz. Has manufacturing as a percentage of GNP been holding steady or less?

Mrs. Norwood. Close to it, I would assume, because production has kept up. There may have been some differences, but it is fairly close. It is the employment side that is changing.

Representative Solarz. That would imply that the loss of jobs in manufacturing is due largely to increases in productivity.

Mrs. Norwood. Yes. At least it is associated with it.

Representative Solarz. Does that constitute an argument, in your judgment, to the proposition that most of the jobs that have been lost in manufacturing have been due to increases in productivity rather than to increases in imports?

Mrs. Norwood. I think in some industries we have had considerable competition from imports. I think that competition from imports has forced a great rationalization of industry. If you are one of the people who has lost your job as a result of that, I do not think you would be very happy about it, but in terms of the overall economy it is probably better for us to have tighter, more efficient industry.

Representative Solarz. Has there been a decline in real income in the country?

Mrs. Norwood. If you look at real earnings, they have declined in the last few years. If you look at the work of some economists who have looked at this over a period of several decades, we have had very little continued upward movement in real family income over the last several decades. That is a big change from what we have been used to.

Representative Solarz. Are you saying that in terms of real income the American family is basically in the same position today that it was 30 years ago?

Mrs. Norwood. I am saying that on average in the last couple of decades there has been a little, but very little, upward movement.

Representative Solarz. On the face of it, that seems somewhat surprising. One of the major trends in our economy has been the emergence of the two-worker family where the wife is now entering the work force. So you would think that real income would have gone up since the family has two wage earners rather than one. The implication of what you are saying is that the husband is earning half in real income what he was earning 30 years ago.

Mrs. Norwood. I do not think that is a correct assumption. Real income probably has gone up for two-earner families somewhat. The number of women who are maintaining households on their own has increased a great deal, and their income is pretty low. We also have had a big increase in senior citizens as people have aged, and their incomes tend generally to be somewhat lower than when they are in their prime working age group.

Representative **Solarz**. Could you provide us for the record or at least send to me, because I am quite interested in this, what the figures are on real income for families?

Mrs. **Norwood**. Sure.

Representative **Solarz**. If you can disaggregate the data by single families and so on and so forth, going back, say, to 1950, 1960, 1970, 1980, and present.

Mrs. **Norwood**. We would be glad to.

[The following information was subsequently supplied for the record:]

No. 705. Median Money Income of Families and Unrelated Individuals, in Current and Constant (1985) Dollars: 1960 to 1985

[See headnote, table 699. Unrelated individuals are persons not living with any relatives. See text, sections 1 and 14. For definition of median, see Guide to Tabular Presentation. See also *Historical Statistics, Colonial Times to 1970*, series G 179-188]

ITEM	1960	1965	1970	1975	1980	1981	1982	1983	1984	1985
CURRENT DOLLARS										
Families: [1]										
Married-couple families	5,873	7,330	10,516	14,867	23,141	25,065	26,019	27,286	29,612	31,100
Wife in paid labor force	6,900	8,633	12,276	17,237	26,879	29,247	30,342	32,107	34,668	36,431
Wife not in paid labor force	5,520	6,706	9,304	12,752	18,972	20,325	21,299	21,890	23,582	24,556
Male householder, no wife present	4,860	6,515	9,012	12,995	17,519	19,889	20,140	21,845	23,325	22,622
Female householder, no husband present	2,968	3,535	5,093	6,844	10,408	10,960	11,484	11,789	12,803	13,660
Unrelated individuals:										
Male	2,480	3,194	4,540	6,612	10,939	11,848	12,470	12,888	13,566	14,921
Female	1,377	2,267	2,483	3,978	6,668	7,370	8,058	8,863	9,501	9,865
CONSTANT (1985) DOLLARS										
Families: [1]										
Married-couple families	21,333	24,992	29,134	28,716	30,211	23,647	28,998	29,462	30,669	31,100
Wife in paid labor force	25,064	29,434	34,010	34,453	35,091	34,594	33,816	34,668	35,905	36,431
Wife not in paid labor force	20,051	22,864	25,776	25,488	24,768	24,041	23,738	23,636	24,423	24,556
Male householder, no wife present	17,654	22,213	24,967	25,974	22,871	23,525	22,446	23,587	24,157	22,622
Female householder, no husband present	10,781	12,053	14,110	13,680	13,588	12,964	12,799	12,729	13,260	13,660
Unrelated individuals:										
Male	9,009	10,890	12,578	13,216	14,281	14,014	13,898	13,916	14,050	14,921
Female	5,002	7,729	6,879	7,951	8,705	8,717	8,981	9,570	9,840	9,865

[1] Beginning 1980, based on household concept. Restricted to primary families, see source.

Source: U.S. Bureau of the Census, *Current Population Reports*, series P-60, No. 156, and earlier issues.

Representative SOLARZ. The Council of Economic Advisers, as I understand it, has submitted an estimate that the minimum wage legislation now before the Congress would result in a loss of, I think they said, 600,000 jobs. Have you had a chance to take a look at that analysis?

Mrs. NORWOOD. No, I have not.

Representative SOLARZ. I gather you would be reluctant to comment on that.

Mrs. NORWOOD. That is right.

Representative SOLARZ. If you did look at it, would you be willing to give us the benefit of your judgment?

Mrs. NORWOOD. No. I have not seen the study. We do not review the work that is done by other parts of the Government.

Representative SOLARZ. Why not?

Mrs. NORWOOD. That is a question of methodology often and different people can have different results.

Representative SOLARZ. Do you know what percentage of the mothers of the country who have preschool children actually work and what percentage stay at home?

Mrs. NORWOOD. Yes, we do, and I will supply that for the record. We have done a great deal of work on that topic. In fact, Secretary McLaughlin has issued a report on childcare that has a lot of data in it, much of which comes from the Bureau of Labor Statistics.

Representative SOLARZ. Presumably you could also let us know, then, the percentage of mothers with school age children who are in the work force.

Mrs. NORWOOD. Yes. I can tell you that more than half of the children in this country under 5 years have mothers in the work force and more than half of the kids under 1 year of age have mothers in the work force. There has been a real change in those data. We will be glad to supply them for the record.

Representative SOLARZ. Thank you.

[The following information was subsequently supplied for the record:]

Table 1. Labor force participation rates of wives and women who maintain families by single year of age of youngest child under 6, March 1977, 1982, and 1987

Year and family status of mothers	Age of youngest child				
	1 year or younger	2 years	3 years	4 years	5 years
1977					
Total mothers	31.6	42.3	45.9	48.8	50.6
Wives	31.4	40.9	44.1	47.0	48.5
Women maintaining families	33.1	52.8	56.0	56.8	60.8
1982					
Total mothers	43.3	52.0	56.4	56.0	57.4
Wives	43.1	51.3	55.2	54.6	53.7
Women maintaining families	44.3	55.9	61.7	60.7	71.3
1987					
Total mothers	51.9	58.5	60.4	62.4	63.1
Wives	52.6	59.0	59.0	61.7	62.5
Women maintaining families	47.5	56.2	66.1	65.4	64.9

Table 3. Labor force and marital status of women by presence and age of own children under 18 years old, March 1987

(Number in thousands)

Labor force and marital status	Total	With no own children under 18 years old	With own children under 18 years old						
			Total	6 to 17 years, none younger			Under 6 years old		
				Total	14 to 17 years, none younger	6 to 13 years	Total	3 to 5 years, none younger	Under 3 years old
Total	95,568	62,449	33,119	17,267	5,722	11,545	15,852	6,281	9,571
In labor force	52,960	31,538	21,422	12,438	4,172	8,266	8,983	3,919	5,064
Labor force participation rate	55.4	50.5	64.7	72.0	72.9	71.6	56.7	62.4	52.9
Married, spouse present	52,282	27,278	25,004	12,759	4,282	8,477	12,245	4,630	7,615
In labor force	29,159	13,201	15,958	9,007	3,027	5,980	6,952	2,826	4,126
Labor Force participation rate	55.8	48.4	63.8	70.6	70.7	70.5	56.8	61.0	54.2
Divorced	8,047	4,738	3,308	2,343	804	1,539	965	599	366
In labor force	6,067	3,407	2,661	1,980	697	1,283	680	468	212
Labor force participation rate	75.4	71.9	80.4	84.5	86.6	83.4	70.5	78.2	57.9
Separated	3,459	1,725	1,735	963	306	656	772	371	400
In labor force	2,123	999	1,124	699	229	470	425	231	195
Labor force participation rate	61.4	57.9	64.8	72.6	74.8	71.6	55.1	62.1	48.6
Widowed	11,123	10,612	511	446	208	238	65	41	24
In labor force	2,157	1,864	293	268	139	129	25	16	9
Labor force participation rate	19.4	17.6	57.4	60.1	66.9	54.2	(1)	(1)	(1)
Never-married	20,658	18,096	2,561	756	120	636	1,805	640	1,166
In labor force	13,454	12,068	1,386	485	80	405	901	378	523
Labor force participation rate	65.1	66.7	54.1	64.1	66.4	63.7	49.9	59.2	44.8

1/ Data not shown where base is less than 75,000.

Representative **Solarz**. I notice that in the data you disaggregated unemployment to the extent that you indicate what the unemployment rate is for blacks, Hispanics, and whites. Do you have data on the unemployment rate for Asian Americans?

Mrs. **Norwood**. No, sir, we don't. It is a small group of the population. It is very difficult to develop very good data for the minority populations of the country. We do not have any data on Native Americans either, for example, and they are also an important part of this country.

Representative **Solarz**. It has always struck me that there is this rather dramatic differential between the unemployment rate for black teenagers and white teenagers. To what extent has that been a historic phenomena, going back for decades and decades, and to what extent is it a relatively recent phenomena?

Mrs. **Norwood**. It has had its ups and downs, certainly. In the last decade or so the black teenage rate has become to be very high, especially during periods of recession. It has come down somewhat.

Perhaps Mr. Plewes could explain that further.

Mr. **Plewes**. I think the relationship goes back quite a ways. The earliest data I have here on black teenage rates goes back to January 1972. Their rate then was 37 percent. If we move forward to the most recent recession period, it had gotten up to the range of 52 percent during the last recession, and now it is down to about 34.8 percent. During that same time the white teenage rate has moved at a lower level in much the same kind of pattern; for the same time periods, 14 percent, 20 percent, and now 13 percent.

Representative **Solarz**. So the ratios remain more or less about the same, it a little bit over 2 to 1.

Mr. **Plewes**. That is correct.

Representative **Solarz**. You first began to get data on this in 1972?

Mr. **Plewes**. Separate data for the black population begins in 1972.

Mrs. **Norwood**. I think when we are looking at black teenagers it is important also to look at the proportion of the population of working age that is employed as well as the unemployed. There is much more discouragement among minorities, and according to our definitions of unemployment, you have to have actually looked for work to be unemployed. The employment-population ratio is much lower for black young people than for whites, and it has increased only slightly.

Representative **Solarz**. You indicate that about 1 in every 4 jobs is in the manufacturing sector of the economy.

Mrs. **Norwood**. A little less than that.

Representative **Solarz**. What percent are in the service sector and how much has that increased?

Mrs. **Norwood**. Nearly 3 out of 4 are in the service-producing sector, and that has gone up markedly over the last 20 years, 30 years, perhaps.

Representative **Solarz**. From what to what?

Mrs. **Norwood**. We have recent data with us.

Mr. **Plewes**. If we look at the data I have with me, the period 1977 through the current period, back in 1977 there were 19.3 million jobs at the beginning of 1977. Right now there are 19.5 million, roughly, in manufacturing. In the service-producting sector, back in 1977 there were 57 million and now there are 80 million. So that is the range of the change.

Representative **Solarz**. Thank you.

Representative **Hamilton**. If there are no further questions, we thank you very much.

The committee stands adjourned.

[Whereupon, at 10:15 a.m., the committee adjourned, subject to the call of the Chair.]

EMPLOYMENT-UNEMPLOYMENT

FRIDAY, JULY 8, 1988

Congress of the United States,
Joint Economic Committee,
Washington, DC.

The committee met, pursuant to notice, at 9:55 a.m., in room SD-628, Dirksen Senate Office Building, Hon. William Proxmire (member of the committee) presiding.

Present: Senators Proxmire and Roth.

Also present: William Buechner, professional staff member.

OPENING STATEMENT OF SENATOR PROXMIRE, PRESIDING

Senator **Proxmire**. Commissioner, I apologize. I was detained on the floor and there was nothing I could do about it, unfortunately. I was very concerned about being detained because your time is very important.

On behalf of the members of the Joint Economic Committee, I am very pleased to welcome Commissioner Janet Norwood of the Bureau of Labor Statistics and her distinguished colleagues, to testify on the employment and unemployment statistics for June.

According to this morning's press release on the employment situation for June, the American economy experienced unusually strong employment growth last month while the unemployment rate fell to 5.3 percent, and I guess 5.2 percent overall, its lowest level since July 1974. Civilian employment rose 823,000 in June, while unemployment fell 328,000.

In the payroll survey, employment grew by 346,000, well above the average of 304,000 jobs created monthly between January and May of this year; 45,000 of those jobs were in manufacturing industries.

Although there is evidence that much of the reported job gain in June was the result of seasonal adjustment factors and therefore may be reversed in July, the June data indicate that the economy continues the strong growth registered throughout this year.

Senator Roth, we are delighted to have you here. Go right ahead, sir.

OPENING STATEMENT OF SENATOR ROTH

Senator **Roth**. Thank you, Mr. Chairman.

I, too, want to welcome the Commissioner. It is always a pleasure to be with you, Commissioner Norwood.

Once again, Mrs. Norwood brings great news for American workers. In June the civilian unemployment rate fell three-tenths of a percentage point to 5.3 percent, the lowest level in 14 years.

The chairman has already mentioned that the household survey showed something like 800,000 were created. I gather this is undoubtedly exaggerated as there were some measurement problems in the previous month. Nonetheless, June gains pushed the level of employment to a level of 115 million. More Americans, as I understand it, are now working than ever before.

The payroll survey has shown 345,000 new jobs. June marks the 67th month of the longest peacetime expansion in U.S. history. During this period 16 million jobs have been created.

There have been arguments that the current economic expansion is flawed because the middle class is being undercut. Despite the flimsiness of the evidence used to push this myth, it has received wide media attention. Therefore, I was interested in the study published in the May 1988 Monthly Labor Review entitled "The Declining Middle-Class Thesis: A Sensitivity Analysis."

According to this study, the middle class has indeed declined as the Chicken Littles have said. However, the reason is not that middle-class Americans are joining the ranks of the homeless and unemployed, but that they have become more affluent. According to this study, the declining proportion of families in the middle has largely moved to the upper class, and this is consistent with the Census Bureau income data and its analysis which was included as part of the Republican section of the 1988 Joint Economic Committee's Annual Report.

Mr. Chairman, I won't read my entire opening statement. I would ask that it be included, and I would also ask that the BLS study be inserted into the record.

Senator **Proxmire**. Without objection, so ordered.

[The complete opening statement of Senator Roth, together with the Bureau of Labor Statistics study, follows:]

COMPLETE OPENING STATEMENT OF SENATOR ROTH

IT GIVES ME GREAT PLEASURE TO JOIN IN WELCOMING OUR WITNESS BEFORE US TODAY, BLS COMMISSIONER JANET NORWOOD.

ONCE AGAIN, DR. NORWOOD BRINGS GREAT NEWS FOR AMERICAN WORKERS. IN JUNE THE CIVILIAN UNEMPLOYMENT RATE FELL THREE TENTHS OF A PERCENTAGE POINT TO 5.3 PERCENT, ITS LOWEST LEVEL IN 14 YEARS.

ACCORDING TO THE HOUSEHOLD SURVEY, 800,000 JOBS WERE CREATED IN JUNE. THIS UNDOUBTEDLY IS SOMEWHAT EXAGGERATED, AS THERE WERE MEASUREMENT PROBLEMS IN THE PREVIOUS MONTH. NONETHELESS, JUNE'S GAINS PUSHED THE LEVEL OF EMPLOYMENT TO A LEVEL OF 115 MILLION. MORE AMERICANS ARE WORKING NOW THAN EVER BEFORE.

THE EMPLOYMENT-POPULATION RATIO-- AN IMPORTANT MEASURE OF THE ECONOMY'S ABILITY TO CREATE ENOUGH NEW JOBS--ALSO REBOUNDED, BOUNCING BACK TO A LEVEL OF 62.3 PERCENT, EQUAL TO ITS ALL TIME HIGH REACHED EARLIER THIS YEAR.

THE PAYROLL SURVEY ALSO POSTED STRONG EMPLOYMENT GAINS. BY THIS MEASURE 345,000 NEW JOBS WERE CREATED IN JUNE. MOREOVER, THE DIFFUSION INDEX CLIMBED TO HEALTHY 65.4 PERCENT, DEMONSTRATING THE BREADTH OF THE EMPLOYMENT INCREASE.

JUNE MARKS THE 67TH MONTH OF THE LONGEST PEACETIME EXPANSION IN U.S. HISTORY. DURING THIS PERIOD 16 MILLION NEW JOBS HAVE BEEN CREATED. WHILE SOME CONSISTENTLY VOICED DESPAIR AND MALAISE ABOUT THE ECONOMY, ECONOMIC GROWTH AND THE PROGRESS IT BRINGS HAS CONTINUED.

IN RECENT YEARS PARTISAN ARGUMENTS HAVE BEEN MADE CONTENDING THAT THE CURRENT ECONOMIC EXPANSION IS FLAWED BECAUSE THE MIDDLE CLASS WAS BEING UNDERCUT. DESPITE THE FLIMSINESS OF THE EVIDENCE USED TO PUSH THIS MYTH, IT RECEIVED WIDE MEDIA ATTENTION. THEREFORE, I WAS INTERESTED IN THE STUDY PUBLISHED IN THE MAY MONTHLY LABOR REVIEW ENTITLED, "THE DECLINING MIDDLE CLASS THESIS."

ACCORDING TO THIS STUDY, THE MIDDLE CLASS HAS INDEED DECLINED, AS THE CHICKEN LITTLES HAVE SAID. HOWEVER, THE REASON IS NOT THAT MIDDLE CLASS AMERICANS ARE JOINING THE RANKS OF THE HOMELESS AND UNEMPLOYED, BUT THAT THEY HAVE

BECOME MORE AFFLUENT. ACCORDING TO THIS STUDY, "THE DECLINING PROPORTION OF FAMILIES IN THE MIDDLE HAS LARGELY MOVED TO THE UPPER CLASS..." THIS IS CONSISTENT WITH THE CENSUS BUREAU INCOME DATA AND ITS ANALYSIS WHICH WAS INCLUDED IN THE REPUBLICAN SECTION OF THE 1988 JEC ANNUAL REPORT.

TABLE 4 OF THE STUDY IS PARTICULARLY INTERESTING. THE PROPORTION OF FAMILIES IN THE LOWER INCOME CLASS IS THE LOWEST SINCE 1969. WHILE THE PROPORTION OF LOWER INCOME FAMILIES INCREASED FROM 32.8 PERCENT IN 1977 TO 33.2 PERCENT IN 1980, IT DECLINED TO 31.7 PERCENT IN 1986. THOUGH THE NEGATIVE INCOME TRENDS OF THE LATE 1970S CONTINUED INTO THE EARLY 1980S, THE CURRENT EXPANSION HAS REVERSED THIS TREND.

MEANWHILE THE PROPORTION OF FAMILIES IN THE UPPER INCOME CLASS HAS DOUBLED FROM 7.5 PERCENT IN 1969 TO 15.3 PERCENT IN 1986. SO THE MIDDLE CLASS HAS DECLINED, BUT ONLY BECAUSE THE PROPORTION MOVING UPWARD HAS JUMPED SHARPLY. AS THE STUDY POINTS OUT, DURING PERIODS OF ECONOMIC EXPANSION, IT IS NORMAL FOR THE STANDARD OF LIVING TO INCREASE.

THIS IS THE REASON WHY ECONOMIC GROWTH IS THE KEYSTONE OF ECONOMIC POLICY. ECONOMIC GROWTH HAS GENERATED 16 MILLION NEW JOBS, AN 11 PERCENT INCREASE IN REAL MEDIAN FAMILY INCOME, AND A HIGHER STANDARD OF LIVING. THE REAGAN ADMINISTRATION LAID THE FOUNDATION FOR THIS ECONOMIC PROGRESS BY REDUCING EXCESSIVE PERSONAL TAX RATES FOR ALL AMERICANS IN THE EARLY 1980S. I AM PROUD THAT THE ROTH-KEMP TAX BILL FORMED THE CORE OF THIS MEASURE, AND THAT ITS ECONOMIC SUCCESS HAS LED NATIONS AROUND THE WORLD TO UNSHACKLE THEIR ECONOMIES BY SIMILAR TAX REDUCTION PLANS.

MR. CHAIRMAN, I ASK THAT THE BLS STUDY BE INSERTED INTO THE RECORD.

The declining middle-class thesis: a sensitivity analysis

New study supports the hypothesis of a shrinking middle; the declining proportion of families in the middle has largely moved to the upper class, although the share of income held by the lower class has declined

Michael W. Horrigan and Steven E. Haugen

In recent years, there has been considerable interest in the changing distribution of income in the United States. The consensus within the literature is that the distribution has become more unequal over the past one or two decades, as evidenced by several measures of income inequality.[1] In addition, a number of studies point to increasing proportions of the population in the lower and upper income classes, and thus a decreasing share in the middle class, as evidence of this trend.

Across these studies, however, opinions differ as to the extent to which the middle class has declined and how this decline has been divided between the lower and upper classes. The lack of agreement among findings can be attributed to variations in both the definition and measurement of the middle. Indeed, most studies fail to test the sensitivity of the results to alternative specifications of the middle class and to different techniques for measuring its size over time.

This article describes the nature and results of such a sensitivity analysis. Data on family income from the March Current Population Survey are used to track changes in the proportions of families in the lower, middle, and upper income classes over the 1969–86 period. By choosing alternative income intervals for defining the three classes, evaluating different methods for measuring changes in class size over time, and examining these changes from both a secular and cyclical perspective, the sensitivity of the findings is assessed. Through such sensitivity analysis, we attempt to reconcile the divergent views on secular changes in the size of the three classes over time. Although the underlying causes of the shifts are important, we do not attempt to identify them.

Consistent with the results found in the literature, we find that the proportion of families in the middle class has declined substantially over time. However, in contrast to many studies, we conclude that the majority of the decline in the middle is offset by an increase in the upper class. It is important to note that our findings do not run counter to arguments of growing inequality in the distribution of income. Indeed, in terms of its share of aggregate income, there has been a growing disparity between the lower class and the remainder of the distribution.

Overview of the literature

A brief review of a few examples from the literature demonstrates some of the differences between studies, both in terms of overall approach and conclusions drawn.[2] For instance, Lester Thurow defined the middle class as including households with income between 75 and 125 percent of median household income, and found that the middle shrank from 28 percent of all households in 1967, a business cycle recovery year, to 24 percent by

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1982, a trough year. The loss was evenly distributed between the lower and upper tiers.[3]

A study by Robert Lawrence concentrated on the weekly earnings of wage and salary workers who usually work full time. Lawrence set the middle-class bracket at roughly two-thirds and four-thirds of men's median weekly earnings in 1983. Under this concept, the proportion of all workers in the middle fell from 50 percent to 46 percent between 1969, a peak year, and 1983, the first year of a recovery. Most of the loss was accounted for by a widening of the lower class, which expanded to 33 percent of all persons.[4]

Katharine Bradbury, using family income to define the middle class, suggested that a reasonable definition of the middle class includes all families with incomes between $20,000 and $49,999, in 1984 dollars. After deflating this interval back to 1973, a peak year, she found that the middle class declined from 53 percent to 48 percent of all families by 1984, the second year of a recovery. Once again, the vast majority of the loss showed up as a widening of the lower class.[5]

Determining the 'middle class'—the choices

Certain critical choices are made in studies of the middle class.[6] First, researchers choose among three sampling units—individuals, families, and households—and between two measures of compensation—wage and salary earnings and total income.[7] Second, one must select a method for measuring the size of the middle class in each year over the relevant time period. Analysts generally adopt one of two methods: they either use dollar intervals adjusted to represent constant purchasing power over time, or they use an interval representing fixed percentages above and below median income. Finally, a technique must be chosen for uncovering the long-run trends in the size of the middle class. Some analysts simply make year-to-year comparisons of class sizes. An alternative approach often employed is to use regression analysis to establish long-run trends.

Selection of a sampling distribution. In this study, the middle class is identified on the basis of family income. This choice is based on both economic and cultural considerations. For instance, it is widely accepted that by virtue of family membership, individuals in families experience significant economies of scale in consumption that do not exist for single individuals, or even for most households comprised of two or more unrelated individuals. For example, suppose that a husband and wife each has average or slightly below-average income. By combining both incomes, they can sustain a level of consumption, such as homeownership, which they could not sustain individually. Each spouse is thus able to enjoy a somewhat higher "standard of living" than he or she would attain alone. Because the vast majority of persons live in families (about four-fifths in 1987), these economies of scale figure importantly in our choice of sampling unit.

In addition, the cultural view of the middle class seems to be one in which the family is the typical income unit. Significant changes have taken place among families over the last two decades, including the very large inflow of wives (and mothers) into the labor force and increases in the percentage of families maintained by single parents (mostly women). This increased heterogeneity among family types gives added impetus to using the family unit in examining changes in the size of the lower, middle, and upper income classes.

None of these reasons, however, diminishes the importance of examining other sampling units, such as the household or the individual; rather, it is simply the lack of agreement across studies as to which group is the most appropriate for analysis of the declining middle-class thesis which invites researchers to explore the issue from different perspectives.[8]

Total money income is chosen as the measure of compensation for the family unit. This measure includes before-tax income from all sources (yearly totals of wage and salary earnings, self-employment earnings, Social Security, public assistance, interest, dividends, rent, and all other sources of money income regularly received) and thus is a comprehensive measure of a family's financial resources.[9]

In addition to economic criteria, numerous social characteristics are also frequently associated with the middle class. These include educational and occupational standards for the earners in the family, as well as certain political and moral values, goals and aspirations, and so forth. At best, these variables can only be imperfectly proxied. Certainly, they cannot be easily quantified. As a result, studies of the middle class, including this one, define the concept in terms of income alone.

Selecting middle-class income intervals. Given the selection of the family and total income as the focus of this study, the income intervals used to define the middle class in any given year need to be determined (in effect, splitting the distribution of incomes into three classes). Most studies do not explicitly identify the criteria by which the choice of a middle-class income interval is made. Although this is understandable given the arbitrary and intuitive nature of the middle-class concept, such an approach does not permit systematic examination of the sensitivity of findings to the choice of a middle-class income interval. To address this shortcoming, two criteria are selected which determine a range of middle-class income intervals used in this study. These criteria impose reasonable bounds on the income intervals defining the middle class, and, at the same time, provide a large number for use in sensitivity analysis.

First, the lower endpoint of the 1986 middle-class income interval is required to be somewhere in the 60- to 90-percent range of median family income in that year ($29,460). Hence, a range of lower endpoints between $17,676 (60 percent of the 1986 median) and $26,514 (90 percent) is chosen. The lower bound of 60 percent reflects an intent to ensure that the lower endpoint of the middle class represents an income ***significantly above the poverty level***, which was about a third of median family income in 1986.[10]

Second, in any given year, a middle-class interval is admissible only if the percentage of families in the middle class is between 40 and 60 percent. While some may intuitively view the middle as consisting of the middle third of families, our choice reflects a desire to create a middle class with a larger proportion of all families. However, the upper end of each middle-class income interval is restricted so that the resulting percentage of families in the upper class is always equal to or greater than 5 percent.

Adhering to these criteria, the procedure for arriving at the set of middle-class income intervals involved two steps. First, the income intervals which represent the boundaries or limits of the two criteria were determined. Second, a range of intervals within these limits was selected. As discussed below, the admissible intervals vary according to the method used to measure the size of the middle class over time.

Comparisons over time

There are essentially two approaches in the literature used to make comparisons of the three classes over time. First, many studies use an interval deflator approach, in which a price index is used to deflate income intervals, thereby maintaining the purchasing power of the middle class over time. The second technique defines the middle class in each year as consisting of those families whose incomes are within given percentages of median family income for that year, thus preserving the relative position of the middle class in the overall distribution of incomes over time.

Interval deflator approach. In this method, we use 1986 as the base year and deflate each chosen middle-class interval back to each year between 1969 and 1986. In deflating incomes, however, there are several price indexes from which to choose, and they often indicate different rates of inflation over any given period. The choice of a price index can affect the cutoff points for the middle interval, and, consequently, the number of families falling into the lower, middle, and upper intervals.

Most studies use the Bureau of Labor Statistics' Consumer Price Index for All Urban Consumers (CPI-U) to measure inflation. However, the methodology used in constructing the CPI-U changed in 1983. Prior to 1983, the measurement of homeowner costs included changes in the asset value of homes. Recognizing that this approach mixed the investment and consumption aspects of homeownership, the BLS conducted extensive research and testing which led to the introduction of the rental equivalence methodology in 1983. The BLS also developed, for research purposes, an index which links the period before and after 1983, thereby treating homeownership costs in a manner consistent with the new approach. (See appendix.) This study uses the research index titled Consumer Price Index for All Urban Consumers, Experimental Measure 1 (REBASED)—hereafter referred to as the CPI-U-X1—because it provides a continuous series with no major change in methodology. However, to test the sensitivity of our results to the choice of a price index, two alternative price indexes, the CPI-U and the Bureau of Economic Analysis' Fixed Weight Personal Consumption Expenditure (FW-PCE) index, are also applied.[11]

Fixed percentage of median income approach. In this method, the middle class in each year consists of families whose incomes are within given percentages of median family income for that year.[12] The purchasing power of the middle-class income intervals produced by this method depends on the behavior of median family income. For example, if median family income is increasing in real value over time, so too will the real value of the associated middle-class income intervals. Indeed, when the CPI-U-X1 is used to calculate the real value of median family income over the 1969–86 period (in 1986 dollars), the real value of median family income has increased, albeit modestly.[13] (See chart 1.)

Secular comparisons

Many studies in the literature compare pairs of years to infer long-run trends in the relative size of income classes. However, we demonstrate that such inferences are very sensitive to the years chosen. As one might expect, results obtained from comparing a peak and trough year differ markedly from a comparison of similar points in successive business cycles. We use regression analysis to uncover the secular nature of changes in the size of each of the three classes over the 1969–86 period. This eliminates the sensitivity of the findings to the choice of years. Regression analysis essentially involves estimating trend lines for each of the lower, middle, and upper class income intervals selected for this study. The procedure first isolates cyclical movements and then estimates the remaining secular trend.[14] However, to demonstrate the sensitive nature of conclusions drawn from making year-to-year comparisons, numerous peak-to-peak and peak-to-trough comparisons are also conducted.

The sensitivity results

Interval deflator approach. The results of applying regression analysis to estimate the trends in the size of the lower, middle, and upper classes over the 1969–86 period are summarized in table 1. (The values of the estimated parameters and their associated levels of statistical significance are shown in appendix table A-1.) In this case, the income intervals created using the CPI-U-X1 are examined. There is a substantial range of income intervals for which the relative size of the middle class declined secularly over the 1969–86 period; in particular, this result holds for all middle-class intervals with starting incomes ranging from $17,676, the lower limit of our first criterion, to $22,000. As income requirements for membership in the middle class are made more stringent, however, changes in the distribution around the $24,000–$26,000 mark help to create an upper limit on the range of intervals over which the declining middle-class thesis holds.

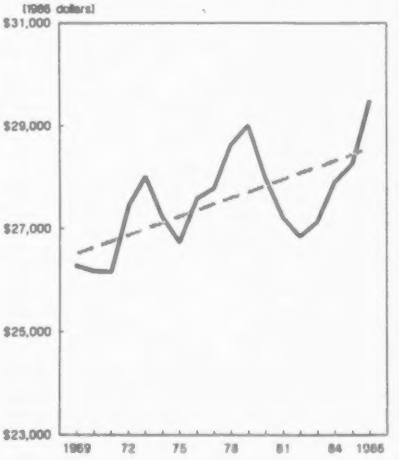
These results support the declining middle-class thesis. There is a consistent decline in the middle class across a substantial range of alternative income intervals. The key question however is, *where did the middle go*? Across virtually all the intervals for which the declining middle-class thesis holds, one fact consistently emerges—the relative size of the lower class has been secularly stable over time. Hence, as table 1 indicates, the upper class has experienced secular increases in relative size over the period being considered. Chart 2 uses the $20,000–$55,999 interval definition of the middle class to depict the changes in the size of the lower, middle, and upper classes and the estimated secular trends.

Table 1. Interval deflator approach (CPI-U-X1): direction of secular change in the relative size of the lower, middle, and upper classes, using selective middle-class income intervals (in 1986 dollars), 1969–86

Middle-class income interval	Lower class	Middle class	Upper class
$17,676 to –			
$39,999	0	–	+
$48,999	0	–	+
$18,000 to –			
$39,999	0	–	+
$41,999	0	–	+
$49,999	0	–	+
$20,000 to –			
$42,999	0	–	+
$49,999	0	–	+
$55,999	0	–	+
$59,999	0	–	+
$22,000 to –			
$45,999	0	–	+
$49,999	0	–	+
$51,999	0	–	+
$59,999	0	–	+
$61,999	0	–	+
$63,999	0	–	+
$24,000 to –			
$49,999	–	–	+
$51,999	–	–	+
$59,999	–	–	+
$61,999	–	0	+
$63,999	–	0	+
$26,000 to –			
$54,999	–	–	+
$59,999	–	0	+
$61,999	–	0	+
$63,999	–	0	+
$26,514 to –			
$55,999	–	0	+
$63,999	–	0	+

NOTE: 0 = trend that is not statistically different from zero,
– = statistically significant negative trend, and
+ = statistically significant positive trend.

Chart 1. Median family income, 1969-86



NOTE: Broken line represents secular trend from which cyclical movements have been removed.

What has happened to the *share of income held by the lower class*? The secularly stable trend in the size of the lower class has been accompanied by a secular *decline* in the share of aggregate income held.[15] Using the $20,000–$55,999 interval to define the middle class, chart 3 shows the secular decline in the proportion of income held by the lower class. Thus, the picture which emerges is one of a lower class that, although stable in size, is receiving a *declining share of the pie over time.*

Choice of a price index. The preceding analysis was conducted using the CPI-U-X1. To test the sensitivity of findings to the choice of an index, regression analysis was conducted to estimate the secular behavior of the three classes using two alternative price indexes, the Consumer Price Index for All Urban Consumers (CPI-U) and the

Fixed Weight Personal Consumption Expenditure (FW-PCE) index. Again, the $20,000–$55,999 income interval is used. As was the case for the CPI-U-X1, the coefficients of the regressions indicate a secular decline in the relative size of the middle class for both of these alternative price indexes. However, in contrast to the stability in the size of the lower class when the CPI-U-X1 was used, the lower class exhibited a secular *increase* when the CPI-U was employed, and a secular *decline* when the FW-PCE index was used.[16]

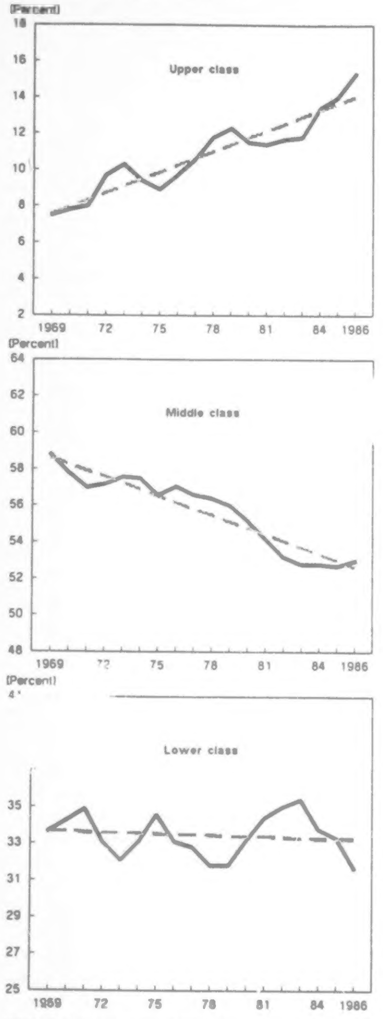
Given these overall secular trends, it is informative to compare class size over time using alternative price indexes. To do so, the distribution of family incomes in 1969 is compared to that of 1986.[17] Results using all three price indexes show a decline in the relative size of the middle class between 1969 and 1986. (See table 2.) With the CPI-U, this decline in the middle was accompanied by an increase in the relative size of the lower class. In contrast, the decline in the middle class associated with the CPI-U-X1 was accompanied by a decline in the proportion of families in the lower class. Finally, the FW-PCE index shows a substantial decline in the relative size of both the middle and lower classes. Clearly, any examination of the declining middle-class thesis using an interval deflator approach is quite sensitive to the choice of a price index.

Fixed percentage of median income approach. The results of the fixed percentage around median family income approach to examining secular trends are shown in table 3. Here, the middle class declined over the 1969–86 period for an even broader range of income intervals than for the interval deflator approach.[18] In terms of where the decline has gone, the results differ from those associated with the interval deflator method. For each interval, as the middle declines in relative size, both the lower and upper classes experience secular *increases* in relative size. (See appendix table A-2.)

Using 68–190 percent as the fixed percentage interval to define the middle class (equivalent to $20,000–$55,999 in 1986), the proportions of the decline in the middle going to the lower and upper classes between 1969 and 1986 are about 40 and 60 percent, respectively. Across the entire range of intervals, the proportion of the decline in the middle going to the lower class varies from roughly 20 percent to 50 percent.[19] The proportion of families in each of the three classes over the 1969–86 period is depicted in chart 4.

It is important to note that while these findings suggest that the lower class has increased in relative size over the 1969–86 period, the share of aggregate income held by this group has either remained the same or declined secularly.[20] Hence, despite differences between the fixed percentage and interval deflator methods in measured

Chart 2. Interval deflator approach: proportions of families in the upper, middle, and lower classes, 1969-86, using the $20,000-$55,999 income interval (in 1986 dollars)



NOTE: Broken line represents secular trend from which cyclical movements have been removed.

Table 2. Percent distribution of families in the lower, middle, and upper classes, using alternative price indexes, 1969 and 1986

Price index and year	Middle-class income interval	Percent distribution of families		
		Lower class	Middle class	Upper class
CPI-U-X1:				
1986	$20,000 - $55,999	31.7	53.0	15.3
1969	7,180 - 20,104	33.7	58.8	7.5
CPI-U:				
1986	20,000 - 55,999	31.7	53.0	15.3
1969	6,680 - 18,704	30.4	60.0	9.7
FW-PCE:				
1986	20,000 - 55,999	31.7	53.0	15.3
1969	7,440 - 20,832	35.6	57.8	6.7

effects, *both* point to a fundamental *decline* in the lower class per-family share of total aggregate income.

Differences between the two approaches. What accounts for the differences in the findings of these two approaches? Using the CPI-U-X1 to deflate both endpoints of the $20,000–$55,999 income interval produces a 1969 income interval of $7,180–$20,104. This interval represents the same level of purchasing power as the $20,000–$55,999 interval in 1986. In the fixed percentage of the median approach, the endpoints $20,000 and $55,999 represent roughly 68 percent and 190 percent of 1986 median family income, respectively. When applied to the value of median family income in 1969, these percentages yield a middle-class income interval of $6,404–$17,931.

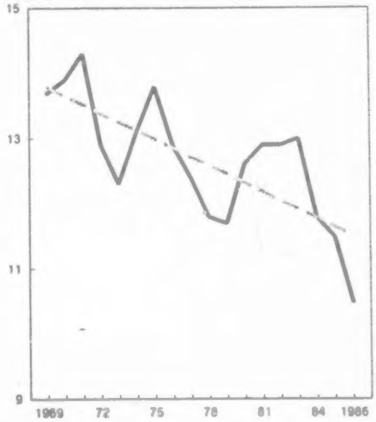
Because the real value of median family income increased over the 1969–86 period, the middle class associated with the fixed percentage approach has a lower level of purchasing power in 1969 than the one associated with the interval deflator approach. Moreover, by simply comparing the lower endpoints of the two income intervals, it is evident that the size of the lower class in 1969 was smaller for the fixed percentage approach than for the interval deflator approach. Hence, because the income intervals in both approaches grow to the same value in 1986, $20,000–$55,999, the fixed percentage approach shows a greater growth in the lower class between 1969 and 1986 than does the interval deflator approach.

The following tabulation shows the distribution of families in the lower, middle, and upper classes in 1969 and 1986, using both the interval deflator and the fixed percentage of median family income approaches:

	Middle-class income interval	*Percent distribution of families*		
		Lower class	*Middle class*	*Upper class*
Interval deflator (CPI-U-X1)				
1986	$20,000 - $55,999	31.7	53.0	15.3
1969	7,180 - 20,104	33.7	58.8	7.5
Fixed percentage interval of median income [68–190]:				
1986	$20,000 - $55,999	31.7	53.0	15.3
1969	6,404 - 17,931	28.7	60.2	11.1

Which of the two approaches is preferred? The answer depends on one's view of what constitutes middle-class income. If one takes the position that the middle should represent a particular standard of living that is maintained over time, then the interval deflator approach is preferred. However, it is also compelling to argue that the middle-class concept is more reflective of where one stands in the relative profile of family incomes, and using the current median or "representative" level of family

Chart 3. Proportion of aggregate income held by the lower class, 1969-86, using the interval deflator approach



NOTE: Broken line represents secular trend from which cyclical movements have been removed.

Table 3. Fixed percentage of median family income approach: direction of secular trend in the relative size of the lower, middle, and upper classes for selective middle-class income intervals, 1969–86

Middle-class income interval	Lower class	Middle class	Upper class
60 to –			
136	+	–	+
166	+	–	+
61 to –			
136	+	–	+
170	+	–	+
68 to –			
146	+	–	+
190	+	–	+
75 to –			
156	+	–	+
217	+	–	+
81 to –			
170	+	–	+
217	+	–	+
244	+	–	+
86 to –			
187	+	–	+
217	+	–	+
244	+	–	+
90 to –			
190	+	–	+
217	+	–	+
244	+	–	+
Symmetric income interval:			
60–140	+	–	+

NOTE: + = statistically significant positive trend, and
– = statistically significant negative trend.

income as a fulcrum is quite reasonable. This study does not make a choice in this debate.

Year-to-year comparisons

In this study, we use regression analysis to evaluate secular trends in the relative size of the lower, middle, and upper classes. Many middle-class studies, however, infer long-run trends in the distribution of incomes by making comparisons between two points in time. To demonstrate the sensitivity of such inferences to the particular choice of years, several year-to-year comparisons are made using the interval deflator approach (although the fixed percentage approach could just as easily been used).

The proportions of families in the lower, middle, and upper classes are very cyclically sensitive. (See chart 2; see also table 4 which provides the percent distribution of families in the lower, middle, and upper classes from 1969 to 1986.) Consequently, if year-to-year comparisons are made, it is inappropriate to choose years at cyclically dissimilar points in business cycles. For example, compare the distribution in 1969, a peak year, with that in 1982, a trough year. It is reasonable to expect that the proportion of families in the lower class will increase from a peak to a trough year. Indeed, the decline in the middle class over this period, 5.6 percentage points, coincides with a 1.3-percentage point increase in the lower class. By 1985, however, after 3 years of economic recovery, the lower class had fallen slightly below its 1969 proportion of 33.7 percent, and by 1986 had declined even further to 31.7 percent. Indeed, a comparison of each recession with its subsequent recovery gives evidence of a definite cyclical pattern in the shift in the distribution of family incomes, with the lower class growing during recessions, but then recovering its prerecession share in the subsequent economic expansion.

Next, compare two cyclically similar years. Between peak years 1969 and 1979, the middle-class decline of 2.8 percentage points was accompanied by a decline in the lower class of 1.9 percentage points; the upper class absorbed these declines, thereby increasing in size by nearly 5 points. Alternatively, comparing 1973 and 1985, both representing the third year of a recovery, the 4.9-percentage point decline in the middle was accompanied by a 1.2-point *rise* in the size of the lower class. Thus, even if care is taken to compare cyclically similar years, the findings may misrepresent the underlying secular trends.

Conclusion

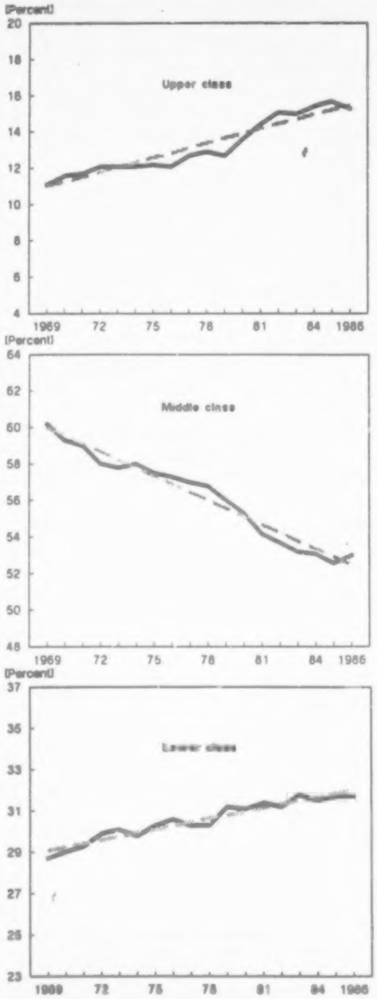
This study suggests that the consensus view of a declining middle class is correct. However, unlike some studies, this one finds that most of the decline in the proportion of families in the middle has gone to the upper class, not the lower. However, the size of this effect varies with the method used to measure the middle class. If the CPI-U-X1 is used to deflate middle-class income intervals (thereby maintaining the purchasing power of the middle class over time), virtually all of the decline in the middle goes to the upper class. Alternatively, if the middle is based on a fixed percentage around median income for each year, the decline in the middle is split between the

Table 4. Distribution of families in the lower, middle, and upper classes, 1969–86, using the interval deflator approach (CPI-U-X1) to adjust the 1986 income interval, $20,000–$55,999

[In percent]

Year	Lower class	Middle class	Upper class
1969	33.7	58.8	7.5
1970	34.3	57.8	7.8
1971	34.9	57.0	8.0
1972	33.1	57.2	9.7
1973	32.1	57.6	10.3
1974	33.1	57.5	9.4
1975	34.6	56.6	8.9
1976	33.1	57.1	9.7
1977	32.8	56.6	10.6
1978	31.8	56.4	11.8
1979	31.8	56.0	12.3
1980	33.2	55.2	11.5
1981	34.4	54.2	11.4
1982	35.0	53.2	11.7
1983	35.4	52.8	11.8
1984	33.8	52.8	13.4
1985	33.3	52.7	14.0
1986	31.7	53.0	15.3

Chart 4. Fixed percentage approach: proportions of families in the upper, middle, and lower classes, 1969-86



NOTE: Broken line represents secular trend from which cyclical movements have been removed.

The percentages of median family income used to define the endpoints of the middle class are roughly 68 and 190; in 1986, this produced a middle-class income interval of $20,000 to $55,999.

lower and upper classes, although the majority of the decline shows up as an increase in the upper class.

Despite these differences, however, it is clear that in both the interval deflator and the fixed percentage approaches, the behavior of the share of aggregate income held by the lower class indicates a growing disparity between the lower class and the rest of the distribution. This result is consistent with other studies which show an increase in income inequality over the past couple of decades.

In seeking to further explain the sensitive nature of findings to analytical choices, we examined the influence of two factors: (1) the choice of a price index in studies which use the interval deflator approach to measure changes in the size of the three classes, and (2) the practice in some studies of making secular inferences from comparisons of two years, rather than using a regression method such as the one employed in this paper.

This study employs a research price index developed by the BLS which, unlike the CPI-U, provides a continuous series with no major changes in methodology. Use of this research index, the CPI-U-X1, suggests that virtually all of the decline in the middle goes to the upper class, whereas the CPI-U indicates that a significant proportion of the decline goes to the lower class.

Finally, several middle-class studies compare pairs of years in order to infer long-run trends in the distribution of incomes, often selecting years for comparison that are at cyclically dissimilar points. Because there is a substantial cyclical pattern to the distribution of family incomes—the size of the lower class widens dramatically in recessions, and shrinks during expansions—such comparisons can give very different results than studies making secular comparisons. Moreover, even comparing similar points in different business cycles can, depending on the points chosen, give very different indications of long-run trends.

FOOTNOTES

ACKNOWLEDGMENTS: The authors thank Robert J. McIntire and Bernard R. Altschuler, Office of Employment and Unemployment Statistics, Bureau of Labor Statistics, for constructing the computer programs used in this study.

[1] Several studies, using measures of income inequality such as the Gini coefficient and the log-variance approach, have found evidence of increased inequality over the past two decades. See, for example, McKinley L. Blackburn and David E. Bloom, "Family Income Inequality in the United States, 1967-84," *Proceedings of the 39th Annual Meetings* (Industrial Relations Research Association, 1986), pp. 349–58; W. Norton Grubb and Robert H. Wilson, "The Distribution of Wages and Salaries, 1960–1980: The Contributions of Gender, Race, Sectoral Shifts and Regional Shifts," Working Paper 39 (University of Texas, 1987); and Chris Tilly, Barry Bluestone, and Bennett Harrison, "What is Making American Wages More Unequal?" *Proceedings of the 39th Annual Meetings* (Industrial Relations Research Association, 1986), pp. 338–48.

The list of articles on the declining middle-class thesis is quite extensive. See, for example, Barry Bluestone and Bennett Harrison, *The Deindustrialization of America* (New York, Basic Books, Inc., 1982); Bob Kuttner, "The Declining Middle," *The Atlantic Monthly*, July 1983, pp. 60-72; McKinley L. Blackburn and David E. Bloom, "What is happening to the middle class?" *American Demographics*, January 1985, pp. 19-25; Neal H. Rosenthal, "The shrinking middle class: myth or reality?" *Monthly Labor Review*, March 1985, pp. 3-10; Patrick J. McMahon and John H. Tschetter, "The declining middle class: a further analysis," *Monthly Labor Review*, September 1986, pp. 22-27; David Wessel, "U.S. Rich and Poor Increase in Numbers; Middle Loses Ground," *The Wall Street Journal*, Sept. 22, 1986; "Is the Middle Class Shrinking?" *Time*, Nov. 3, 1986, pp. 54-56; Barry Bluestone and Bennett Harrison, "The Great American Job Machine: The Proliferation of Low Wage Employment in the U.S. Economy," a study prepared for the U.S. Congress, Joint Economic Committee, December 1986; and Marvin H. Kosters and Murray N. Ross, "The Distribution of Earnings and Employment Opportunities: a Re-examination of the Evidence," *Studies in Economic Policy* (Washington, American Enterprise Institute, 1987).

See Lester C. Thurow, "The Disappearance of the Middle Class," *The New York Times*, Feb. 5, 1984, p. E3.

See Robert Z. Lawrence, "Sectoral Shifts and the Size of the Middle Class," *The Brookings Review*, Fall 1984, pp. 3-11.

See Katharine L. Bradbury, "The Shrinking Middle Class," *New England Economic Review*, September/October 1986, pp. 41-55.

For a review of the analytical choices made in studies of income distributions, as well as a comprehensive literature review, see Gary W. Loveman and Chris Tilly, "Good jobs or bad jobs—What does the evidence say?" *New England Economic Review*, January/February 1988, pp. 46-65.

A household is defined by the Bureau of the Census as consisting of all persons who occupy a housing unit. A household includes the related family members and all the unrelated persons, if any, who share the housing unit. The term "family" is defined as a group of two persons or more (one of whom is the householder) related by birth, marriage, or adoption and residing together.

Total income is defined as yearly totals (before taxes) of wage and salary earnings plus all other reported sources of money income, such as interest, transfer payments, and so forth. Although a few studies focus on weekly earnings, annual measures are usually preferred because they take into account the number of weeks worked per year.

While the family is chosen for this study, it is important at some point to consider the consistency of findings between studies using individuals or households, and studies using families as the unit of analysis.

Note that the ideal data, after-tax income, are not available from the March Current Population Survey. Also, we exclude families reporting negative income from our universe.

Poverty levels of income are determined by the Bureau of the Census and vary with the size of the family. The poverty level of income for a three-person family in 1986 was $8,737, 28 percent of median family income for a three-person family in that year; that for a four-person family was $11,203, or 32 percent of the median. The average family size in 1986 was 3.2 persons.

What is the potential effect of using alternative choices of price indexes? To illustrate, let the 1986 income interval, $20,000-$55,999, represent the middle class in that year. Using the price index approach, we derive nominal values for these two endpoints over the 1969-85 period which represent the same amount of purchasing power as the $20,000-$55,999 interval in 1986.

Consider the effect of using the CPI-U, which shows a greater rate of inflation over the time period than the CPI-U-X1. Under the CPI-U-X1 the nominal value of the $20,000 endpoint in 1969 dollars is $7,180. Using the CPI-U, this value is $6,660, lower because of the relatively higher rate of inflation associated with this index. In other words, the relative size of the lower class in 1969 will automatically be smaller from using the CPI-U than from using the CPI-U-X1. Hence, because both values grow to $20,000 by 1986, the change in the size of the lower class between 1969 and 1986 will necessarily be larger for the CPI-U than for the CPI-U-X1.

In contrast, consider the use of the Fixed Weight Personal Consumption Expenditure (FW-PCE) index. Because this index indicates a slower rate of inflation than the CPI-U-X1, the nominal value of the $20,000 endpoint in 1969 dollars will be higher than the figure from the CPI-U-X1. Accordingly, the change in the size of the lower class over the period in question will be smaller for the FW-PCE than for the CPI-U-X1.

Note that, using a fixed percentage approach to define the middle class in any given year, the intervals representing the limits of our two criteria are asymmetric with respect to median family income in 1986. Most symmetric intervals violate our criteria for interval selection. For example, choosing $26,000 (roughly 88 percent of the median) as our left endpoint of the middle class, to satisfy symmetry our upper endpoint becomes $32,920 (approximately 112 percent of the median). However, in this case, only 12.9 percent of families are found in the middle class.

By applying our two criteria, the resulting qualifying symmetric intervals vary within a small range of each other. Specifically, the narrowest and widest represent 62 to 138 and 60 to 140 percent of median family income, respectively. However, to further test the sensitivity of our findings to the variety of choices which can be made in this type of study, we incorporate into our approach the symmetric interval 60 to 140 percent of median family income.

In addition, it should be noted that while many studies in the literature use symmetric intervals, such a choice is inconsistent with the asymmetric nature of the distribution. For example, consider the interval representing 50 and 150 percent of median family income. The percentage of families found in the 50-100 percent interval is not equal to the percentage in the 100-150 percent interval. The former interval contains 28.6 percent of families and the latter, 23.3 percent.

Percentage interval of median family income	*Percentage of families*
[80-100, 100-120]	[11.2, 10.5]
[70-100, 100-130]	[16.8, 15.2]
[60-100, 100-140]	[22.7, 19.6]
[50-100, 100-150]	[28.6, 23.3]
[40-100, 100-160]	[34.3, 26.6]
[30-100, 100-170]	[39.8, 29.5]

The data also indicate that, as the symmetric intervals around median family income get larger, the asymmetry of the distribution becomes more pronounced.

As the tabulation below indicates, the real value of median family income has increased slightly over the 1969-86 period:

Year	*Current dollars*	*Constant (1986) dollars*
1969	$ 9,433	$26,276
1970	9,867	26,172
1971	10,285	26,170
1972	11,116	27,447
1973	12,051	28,026
1974	12,902	27,219
1975	13,719	26,743
1976	14,958	27,588
1977	16,009	27,793
1978	17,640	28,636
1979	19,587	29,018
1980	21,023	27,093
1981	22,388	27,236
1982	23,433	26,873
1983	24,674	27,144
1984	26,433	27,912
1985	27,735	28,272
1986	29,458	29,458

Current-dollar data were taken from various issues of *Current Population Reports*, Series P-60 (Bureau of the Census). Constant-dollar data were derived by inflating the current-dollar figures by the CPI-U-X1, a price index developed by the Bureau of Labor Statistics for research purposes.

In order to isolate the secular trend in the time series behavior of the class size associated with any income interval, we estimated three separate equations. The first equation regresses real values of gross national product against a linear function of time. The error terms from this regression represent the cyclical portion of real gross national product.

These error terms are then used as an independent variable in a regression with the proportion of families in a given income class (lower, middle, or upper) as the dependent variable (also a simple linear form). The error terms from this regression represent the secular behavior of the dependent variable; that is, the secular trend associated with the time series behavior of the proportion of families in the class.

We then fit a linear regression of the error terms from the second equation against time. The coefficient [illegible] time can be tested to determine if it is statistically different from zero. Because the error terms represent the secular behavior of the proportion of families in a given class, this provides a test of whether this trend is positive, negative, or zero.

[15] Results are available from the authors.

[16] Results are available from the authors.

[17] The reader should be cautioned against inferring long-run trends from year-to-year comparisons. However, given the results of our regression analysis (and hence, *a priori* knowledge of long-run trends in the distribution), the example presented in the text is an acceptable way of demonstrating the sensitivity of findings to the choice of a price index.

[18] The conclusions we have drawn under the fixed percentage of median income approach remain unchanged when we specifically consider symmetric percentage intervals. As noted earlier, the range of symmetric intervals which satisfy our criteria is very small. We present results of one such interval which represents 60 percent and 140 percent of median family income in each year. The regression results show that the long-run trend in the size of the three classes is the same as for the other fixed percentage intervals. (See appendix table A-2.)

[19] Results are available from the authors.

[20] Results are available from the authors.

APPENDIX: Comparison of price indexes

In 1983, a new methodology using a rental equivalence approach was incorporated into the CPI-U. (For a discussion of methods used to estimate changes in housing prices, see the following *Monthly Labor Review* articles: Janet L. Norwood, "Two Consumer Price Index issues: weighting and homeownership," March 1981, pp. 58–59; "Indexing Federal programs: the CPI and other indexes," March 1981, pp. 60–65; and "The effect of rental equivalence on the Consumer Price Index, 1967–82," February 1985, pp. 53–55. Also see, "Changing the Homeownership Component of the Consumer Price Index to Rental Equivalence," *CPI Detailed Report*, January 1983, pp. 7–13.) Before adopting this change in method, the Bureau developed several experimental price indexes. One such index, the CPI-U-X1, became the model for the changes that were incorporated into the CPI-U in 1983.

In this paper, we employ a price index developed by the BLS for research purposes which links the pre-1983 CPI-U-X1 to the post-1982 CPI-U series. This results in a research price index which is consistent with the current treatment of housing in the CPI-U. The tabulation below presents figures for the CPI-U, CPI-U-X1, and the Bureau of Economic Analysis' Fixed Weight Personal Consumption Expenditure (FW-PCE) index, which is also used in this study:

Year	*Price indexes (1986=100)*		
	CPI-U	*CPI-U-X1 (REBASED)*	*FW-PCE*
1969	33.4	35.9	37.2
1970	35.4	37.7	38.8
1971	36.9	39.3	40.5
1972	38.2	40.5	41.9
1973	40.5	43.0	44.3
1974	45.0	47.4	48.4
1975	49.1	51.3	52.2
1976	51.9	54.2	55.1
1977	55.3	57.6	58.6
1978	59.5	61.6	62.7
1979	66.2	67.5	68.2
1980	75.2	75.1	75.3
1981	82.9	82.2	82.1
1982	88.0	87.2	86.8
1983	90.9	90.9	90.5
1984	94.7	94.7	94.1
1985	98.1	98.1	97.5
1986	100.0	100.0	100.0

Summary of regression results

Table A-1. Interval deflator approach: secular trend coefficients on the relative size of the lower, middle, and upper classes for alternative middle-class income intervals (in 1986 dollars), 1969–86

Middle - class income interval	Lower class	Middle class	Upper class
$17,676 to –			
$39,999	.020	–.548**	.529**
$48,999	....	–.502**	.465**
$18,000 to –			
$39,999	.018	–.548**	.529**
$41,999	....	–.537**	.519**
$49,999	....	–.496**	.461**
$20,000 to –			
$42,999	–.028	–.493**	.514**
$49,999	....	–.448**	.461**
$55,999	....	–.353**	.380**
$59,999	....	–.302**	.328**
$22,000 to –			
$45,999	–.083	–.430**	.494**
$49,999	....	–.393**	.461**
$51,999	....	–.358**	.432**
$59,999	....	–.247**	.328**
$61,999	....	–.215**	.299**
$63,999	....	–.190**	.276**
$24,000 to –			
$49,999	–.182**	–.293**	.461**
$51,999	....	–.256**	.432**
$59,999	....	–.145*	.328**
$61,999	....	–.113	.299**
$63,999	....	–.087	.276**
$26,000 to –			
$54,999	–.249**	–.148*	.394**
$59,999	....	–.081	.328**
$61,999	....	–.049	.299**
$63,999	....	–.024	.276**
$26,514 to –			
$55,999	–.249**	–.132	.379**
$63,999	....	–.096	.313**

NOTE: *indicates coefficient is statistically different from zero at the 95-percent level of confidence.

**indicates coefficient is statistically different from zero at the 99-percent level of confidence.

Table A-2. Fixed percentage of median family income approach: secular trend coefficients on the relative size of the lower, middle, and upper classes for alternative middle-class income intervals, 1969–86

Middle - class income interval	Lower class	Middle class	Upper class
60 to –			
136	.187**	–.447**	.260**
166	....	–.492**	.301**
61 to –			
136	.184**	–.444**	.260**
170	....	–.497**	.307**
68 to –			
146	.173**	–.452**	.278**
190	....	–.442**	.265**
75 to –			
156	.159**	–.452**	.291**
217	....	–.380**	.215**
81 to –			
170	.118**	–.430**	.307**
217	....	–.339**	.215**
244	....	–.290**	.168**
88 to –			
187	.068**	–.351**	.278**
217	....	–.292**	.215**
244	....	–.242**	.168**
90 to –			
190	.063**	–.338**	.265**
217	....	–.335**	.272**
244	....	–.238**	.168**
Symmetric income interval:			
60–140	.187**	–.456**	.268**

NOTE: **indicates that the coefficient is statistically different from zero at the 99-percent level of confidence.

Senator **Proxmire**. Senator D'Amato has requested that his written opening statement be inserted in the record. Without objection, so ordered.

[The written opening statement of Senator D'Amato follows:]

WRITTEN OPENING STATEMENT OF SENATOR D'AMATO

MR. CHAIRMAN, I WOULD LIKE TO WELCOME TO THE JOINT ECONOMIC COMMITTEE THIS MORNING DR. JANET NORWOOD. COMMISSIONER NORWOOD, I AM MOST INTERESTED IN YOUR OBSERVATIONS ON JUNE'S EMPLOYMENT FIGURES.

LAST MONTH YOU REPORTED TO THIS COMMITTEE EMPLOYMENT FIGURES FOR MAY THAT DEMONSTRATED A SLIGHT DETERIORATION OF LABOR MARKET CONDITIONS DUE TO SEASONAL ADJUSTMENT PROBLEMS. CIVILIAN EMPLOYMENT FELL 520,000 IN MAY, REDUCING THE LEVEL TO 114.2 MILLION. THE UNEMPLOYMENT RATE ROSE TWO TENTHS OF A PERCENTAGE POINT TO 5.6 PERCENT.

NONETHELESS, BY HISTORICAL STANDARDS THESE EMPLOYMENT FIGURES ARE STILL QUITE HIGH. THE LEVEL OF CIVILIAN EMPLOYMENT REMAINS HIGH, AND BUSINESS PAYROLLS INCREASED BY 210,000. THE ECONOMIC OUTLOOK FOR 1988 CONTINUES TO LOOK BRIGHT.

FOR THE MONTH OF JUNE, THE UNEMPLOYMENT RATE DECREASED BY THREE TENTHS OF A PERCENT TO 5.3 PERCENT. THE NUMBER OF INDIVIDUALS EMPLOYED, AS SHOWN BY BUSINESS PAYROLLS, INCREASED BY APPROXIMATELY 345,000.

IN THE STATE OF NEW YORK, THE UNEMPLOYMENT RATE FOR THE MONTH OF JUNE DECREASED FROM 4.2 PERCENT TO 3.5 PERCENT. OVERALL, THESE FIGURES INDICATE THAT THE EMPLOYMENT PICTURE FOR OUR NATION LOOKS PROMISING.

ALTHOUGH IN THE SUMMER MONTHS SEASONAL FACTORS TEND TO DISTORT EMPLOYMENT FIGURES, I AM HOPEFUL THAT THE DISTORTIONS WE SAW IN MAY WERE ONLY TEMPORARY AND THAT EMPLOYMENT CONDITIONS WILL CONTINUE TO IMPROVE.

I LOOK FORWARD TO DR. NORWOOD'S TESTIMONY THIS MORNING AND HOPE IT WILL CONTAIN ENCOURAGING EMPLOYMENT INFORMATION FOR THE MONTH OF JUNE.

THANK YOU, MR. CHAIRMAN.

Senator PROXMIRE. Senator Roth, it is good to hear that there are so many more upward-bound yuppies. They are getting so rich that they are no longer middle classers, but upper class.

You know, I have been in politics a long time, but I have never met anybody, not Rockefeller, not Heinz, not anybody who claims that they are in the upper class. Everybody is in the middle class. So if they are going upper class, they must be going to Heaven. [Laughter.]

Commissioner Norwood, go right ahead.

STATEMENT OF HON. JANET L. NORWOOD, COMMISSIONER, BUREAU OF LABOR STATISTICS, DEPARTMENT OF LABOR, ACCOMPANIED BY THOMAS J. PLEWES, ASSOCIATE COMMISSIONER, OFFICE OF EMPLOYMENT AND UNEMPLOYMENT STATISTICS; AND THOMAS R. TIBBETTS, ASSISTANT COMMISSIONER, DIVISION OF INDUSTRIAL PRICES AND PRICE INDEXES

Mrs. NORWOOD. Thank you very much.

I would like to introduce Tom Tibbetts, who is our Assistant Commissioner for Producer Prices, and Tom Plewes, our Associate Commissioner for Employment and Unemployment.

Senator PROXMIRE. May I just say, Mr. Tibbetts, that I have presided or I have attended almost all the unemployment hearings for the last 12 or 13 years and it is great to have you.

Is this the first time you have testified, or have you been here before?

Mr. TIBBETTS. I have not been here before. This is my first time. It is a great pleasure.

Senator PROXMIRE. It is an honor to have you present and you join illustrious company.

Mrs. NORWOOD. We always like to expose our most capable people before this committee.

We are very pleased to be here this morning. Employment increased in June, and unemployment, which had edged up in May, declined. Both the overall and the civilian worker jobless rates—at 5.2 and 5.3 percent, respectively—were down by a half a percentage point since the beginning of the year. Both rates were at their lowest levels in 14 years.

The 345,000 growth in employment measured by our business survey was somewhat higher than the average increase of 300,000 recorded during the first 5 months of 1988. Job gains in June were widespread, as increases occurred through private sector industries. Nearly two-thirds of the 185 industries in the BLS diffusion index registered increases in June, the highest level thus far this year.

Employment in manufacturing increased by a healthy 45,000 with strong job growth in durable goods factories, especially in fabricated metals and machinery. In the services industry, the number of jobs grew by 160,000, considerably more than the increases registered in each of the prior 3 months.

Employment in the household survey jumped by a seasonally adjusted 800,000 in June, more than recovering the 500,000 decline in the survey in May. As will be recalled from last month's discussion, the exact time within the April-to-July period that workers, particularly young workers, enter the job market varies from one year to the next. Three-fourths of the June employment increase took place among youth 16 to 24 years of age.

Adult men and teenagers accounted for all of the unemployment decrease in June. Joblessness among adult men declined to 4.6 percent, returning to the April rate. The unemployment rate for teenagers dropped by 2 percentage points to 13.6. The rate for black teenagers, which is highly variable from one month to the next, also dropped to 28.4 percent. While high, it is the first time this rate has been below 30 percent since late 1973.

Discouraged workers declined to 910,000 in the quarter ending in June, returning to the level of late last year. The number of persons working part time for economic reasons rose from May to June. This series has shown no clear trend over the last year.

I think it is sometimes useful at these hearings to step back a bit and look at the labor market developments in a longer perspective. As you know, the current economic expansion has been underway now for 67 months, or about 5½ years. But the pace of employment growth has not been consistent. We have really had three distinctly different stages of growth. First, a very strong initial rebound occurred in the first 2 years following the 1981–82 recession. Then we had a 2-year period of slower, more moderate expansion, and finally, the last year and a half has been a period of strong growth.

In the initial period of rebound, the number of nonfarm payroll jobs rose sharply—by 8 percent—with goods-producing employment rising at an even faster pace. This represented a classic response of strong recovery following a very steep recession. During this period, the unemployment rate fell more than 3 full percentage points—from 10.8 to 7.3 percent.

Not surprisingly, employment growth moderated over the next 2 years and, as a result, the decline in unemployment also slowed. Payroll employment grew at only about half the rate of the earlier period of recovery, and jobs in manufacturing and mining actually declined. The jobless rate improved by only half a percentage point.

Far more interesting has been the pickup in job growth over the last year and a half. During this period, factory and construction jobs rose considerably, and the service-producing sector continued to advance. At the same time, the unemployment rate dropped from 6.7 to 5.3 percent. All major worker groups had lower jobless rates, with the sharpest drop among adult men.

To summarize the over-the-month developments, employment increased substantially in June and unemployment moved down. The overall unemployment rate is now at its lowest level in 14 years.

Senator PROXMIRE. In how many years?

Mr. NORWOOD. Fourteen.

Senator PROXMIRE. Fourteen years. The last year was——

Mrs. NORWOOD. 1974.

Senator PROXMIRE. 1974. Thank you.

Mrs. NORWOOD. Mr. Chairman, since I last appeared before this committee, the Bureau has reported to Congress on an experimental price index reweighted to represent the expenditure experience of Americans 62 years and older. That report has been required by amendments to the Older Americans Act.

Over the 5 years covered by the study—December 1982 to December 1987—the experimental index rose 19.5 percent, very close to the 18.2 percent increase in the Consumer Price Index for All Urban Consumers, and more than the 16.5 percent increase in the index for Urban Wage Earners and Clerical Workers.

The experimental index is subject to considererably larger sampling error than either of the two official measures and should, therefore, be interpreted with care. The experimental index is only a first approximation of a fully specified consumer price index for older Americans. If such an index were to be used to adjust payments, a good deal of work would be necessary to make it reliable enough for such use. A full-blown index would require both a larger sample of older American households in the expenditure survey upon which the reweighting is based and new samples of market basket items, stores, and prices to represent the goods and the services and the price experience of older Americans.

If the work is to be undertaken, I believe that it should begin with a comprehensive reexamination of the medical care component. Older Americans have different illnesses, buy different drugs, have different insurance experiences, and frequently see different medical specialists than the younger population.

With the committee's permission, I would like to submit a copy of the report for the record.

Senator PROXMIRE. Without objection, so ordered.

Mrs. NORWOOD. And we would be glad to try to answer any questions you may have.

[The table attached to Mrs. Norwood's statement, together with the Employment Situation press release and the report referred to, follows:]

Unemployment rates of all civilian workers by alternative seasonal adjustment methods

Month and year	Unad-justed rate	X-11 ARIMA method						X-11 method (official method before 1980)	Range (cols. 2-8)
		Official procedure	Concurrent (as first computed)	Concurrent (revised)	Stable	Total	Residual		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1987									
June........	6.3	6.1	6.1	6.1	6.1	6.1	6.2	6.1	.1
July........	6.1	6.0	6.0	6.1	6.0	6.1	6.1	6.0	.1
August......	5.8	6.0	6.0	6.0	6.0	6.1	6.1	6.0	.1
September...	5.7	5.9	5.9	5.9	6.0	5.9	5.9	5.9	.1
October.....	5.7	6.0	6.0	6.0	6.0	5.9	6.0	6.0	.1
November....	5.6	5.9	5.9	5.9	5.9	5.9	5.9	5.9	-
December....	5.4	5.8	5.8	5.8	5.7	5.7	5.8	5.8	.1
1988									
January.....	6.3	5.8	5.8	5.8	5.8	5.8	5.6	5.8	.2
February....	6.2	5.7	5.7	5.7	5.8	5.7	5.6	5.8	.2
March.......	5.9	5.6	5.6	5.6	5.7	5.6	5.5	5.6	.2
April.......	5.3	5.4	5.5	5.5	5.5	5.4	5.4	5.4	.1
May.........	5.4	5.6	5.6	5.6	5.6	5.6	5.8	5.6	.2
June........	5.5	5.3	5.4	5.4	5.3	5.4	5.4	5.3	.1

SOURCE: U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
July 1988

(1) Unadjusted rate. Unemployment rate for all civilian workers, not seasonally adjusted.

(2) Official procedure (X-11 ARIMA method). The published seasonally adjusted rate for all civilian workers. Each of the 3 major civilian labor force components—agricultural employment, nonagricultural employment and unemployment—for 4 age-sex groups—males and females, ages 16-19 and 20 years and over—are seasonally adjusted independently using data from January 1974 forward. The data series for each of these 12 components are extended by a year at each end of the original series using ARIMA (Auto-Regressive, Integrated, Moving Average) models chosen specifically for each series. Each extended series is then seasonally adjusted with the X-11 portion of the X-11 ARIMA program. The 4 teenage unemployment and nonagricultural employment components are adjusted with the additive adjustment model, while the other components are adjusted with the multiplicative model. The unemployment rate is computed by summing the 4 seasonally adjusted unemployment components and calculating that total as a percent of the civilian labor force total derived by summing all 12 seasonally adjusted components. All the seasonally adjusted series are revised at the end of each year. Extrapolated factors for January-June are computed at the beginning of each year; extrapolated factors for July-December are computed in the middle of the year after the June data become available. Each set of 6-month factors are published in advance, in the January and July issues, respectively, of Employment and Earnings.

(3) Concurrent (as first computed, X-11 ARIMA method). The official procedure for computation of the rate for all civilian workers using the 12 components is followed except that extrapolated factors are not used at all. Each component is seasonally adjusted with the X-11 ARIMA program each month as the most recent data become available. Rates for each month of the current year are shown as first computed; they are revised only once each year, at the end of the year when data for the full year become available. For example, the rate for January 1984 would be based, during 1984, on the adjustment of data from the period January 1974 through January 1984.

(4) Concurrent (revised, X-11 ARIMA method). The procedure used is identical to (3) above, and the rate for the current month (the last month displayed) will always be the same in the two columns. However, all previous months are subject to revision each month based on the seasonal adjustment of all the components with data through the current month.

(5) Stable (X-11 ARIMA method). Each of the 12 civilian labor force components is extended using ARIMA models as in the official procedure and then run through the X-11 part of the program using the stable option. This option assumes that seasonal patterns are basically constant from year-to-year and computes final seasonal factors as unweighted averages of all the seasonal-irregular components for each month across the entire span of the period adjusted. As in the official procedure, factors are extrapolated in 6-month intervals and the series are revised at the end of each year. The procedure for computation of the rate from the seasonally adjusted components is also identical to the official procedure.

(6) Total (X-11 ARIMA method). This is one alternative aggregation procedure, in which total unemployment and civilian labor force levels are extended with ARIMA models and directly adjusted with multiplicative adjustment models in the X-11 part of the program. The rate is computed by taking seasonally adjusted total unemployment as a percent of seasonally adjusted total civilian labor force. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(7) Residual (X-11 ARIMA method). This is another alternative aggregation method, in which total civilian employment and civilian labor force levels are extended using ARIMA models and then directly adjusted with multiplicative adjustment models. The seasonally adjusted unemployment level is derived by subtracting seasonally adjusted employment from seasonally adjusted labor force. The rate is then computed by taking the derived unemployment level as a percent of the labor force level. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(8) X-11 method (official method before 1980). The method for computation of the official procedure is used except that the series are not extended with ARIMA models and the factors are projected in 12-month intervals. The standard X-11 program is used to perform the seasonal adjustment.

Methods of Adjustment: The X-11 ARIMA method was developed at Statistics Canada by the Seasonal Adjustment and Times Series Staff under the direction of Estela Bee Dagum. The method is described in The X-11 ARIMA Seasonal Adjustment Method, by Estela Bee Dagum, Statistics Canada Catalogue No. 12-564E, February 1980.

The standard X-11 method is described in X-11 Variant of the Census Method II Seasonal Adjustment Program, by Julius Shiskin, Allan Young and John Musgrave (Technical Paper No. 15, Bureau of the Census, 1967).

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THE EMPLOYMENT SITUATION: JUNE 1988

Employment rose markedly in June and unemployment declined, the Bureau of Labor Statistics of the U.S. Department of Labor reported today. Both the overall and civilian worker jobless rates, which had risen slightly in May, declined three-tenths of a percentage point, to 5.2 and 5.3 percent, respectively.

Nonfarm payroll employment, as measured by the monthly survey of business establishments, rose by 345,000 in June. Job gains occurred in most of the major industry divisions. Total civilian employment, as measured by the monthly survey of households, increased by about 800,000 in June; this followed a decline of 500,000 in May.

Unemployment (Household Survey Data)

The number of unemployed persons fell by 330,000 in June to a seasonally adjusted level of 6.5 million. The civilian worker unemployment rate of 5.3 percent was down from 5.6 percent in May and was the lowest figure since May 1974, when it was 5.1 percent. (See table A-2.)

Adult men accounted for about three-fifths of the drop in unemployment in June, as their jobless rate fell to 4.6 percent. The rest of the decline occurred among teenagers, whose jobless rate dropped 2 full percentage points to 13.6 percent. The unemployment rate for adult women was unchanged at 4.9 percent. There was some improvement in the rates for blacks (11.5 percent) and whites (4.5 percent), while the rate for Hispanics (9.0 percent) was unchanged. The rate for black teenagers fell 6 percentage points to 28.4 percent; this rather volatile measure was still far higher than the 12.0-percent rate for white teens. (See tables A-2 and A-3.)

Civilian Employment and the Labor Force (Household Survey Data)

Civilian employment jumped by 820,000 on a seasonally adjusted basis to 115.0 million, more than offsetting the 500,000 decrease reported between April and May. This large increase was affected in part by the timing of the survey reference period (the week that contains the 12th day of the month) which occurred very late in June, allowing extra time for students, graduates, and seasonal workers to find jobs. Three-fourths of the seasonally adjusted increase occurred among youth 16-24 years of age.

The sharp employment increase in June restored the civilian employment-population ratio to its April high of 62.3 percent. The number of persons working at part-time jobs for economic reasons--persons who would prefer full-time jobs--rose by 470,000 to 5.3 million in June; this was about the same level as in March. (See tables A-2, A-3, and A-4.)

Table A. Major indicators of labor market activity, seasonally adjusted

Category	Quarterly averages		Monthly data			May-June change
	1988		1988			
	I	II	Apr.	May	June	
HOUSEHOLD DATA						
	Thousands of persons					
Labor force 1/	122,882	122,968	123,055	122,692	123,157	465
Total employment 1/	115,954	116,352	116,445	115,909	116,703	794
Civilian labor force	121,142	121,258	121,323	120,978	121,472	494
Civilian employment	114,214	114,642	114,713	114,195	115,018	823
Unemployment	6,928	6,616	6,610	6,783	6,455	-328
Not in labor force	62,825	63,131	62,909	63,396	63,090	-306
Discouraged workers	1,027	910	N.A.	N.A.	N.A.	N.A.
	Percent of labor force					
Unemployment rates:						
All workers 1/	5.6	5.4	5.4	5.5	5.2	-0.3
All civilian workers	5.7	5.5	5.4	5.6	5.3	-.3
Adult men	5.0	4.7	4.6	4.9	4.6	-.3
Adult women	5.0	4.9	4.8	4.9	4.9	0
Teenagers	16.0	15.0	15.9	15.6	13.6	-2.0
White	4.8	4.6	4.6	4.7	4.5	-.2
Black	12.5	12.0	12.2	12.4	11.5	-.9
Hispanic origin	7.9	9.1	9.3	9.0	9.0	0
ESTABLISHMENT DATA						
	Thousands of jobs					
Nonfarm employment	104,670	p105,544	105,281	p105,502	p105,848	p346
Goods-producing	25,260	p25,489	25,435	p25,464	p25,569	p105
Service-producing	79,410	p80,054	79,846	p80,038	p80,279	p241
	Hours of work					
Average weekly hours:						
Total private	34.7	p34.8	34.9	p34.7	p34.8	p0.1
Manufacturing	41.0	p41.1	41.2	p41.0	p41.0	p0
Overtime	3.8	p3.9	3.9	p3.9	p3.9	p0

1/ Includes the resident Armed Forces. N.A.=not available.
p=preliminary.

The civilian labor force rose by 490,000 to 121.5 million in June, with teenagers accounting for about three-fifths of the rise. Over the year, the labor force grew by 1.9 million, about average for the 1980's. (See tables A-2 and A-3.)

Discouraged Workers

In the second quarter of 1988, there were 910,000 discouraged workers --persons who were reported as wanting to work but who had not looked for jobs because they believed they could not find any. This number was the same as in the fourth quarter of 1987, after rising a bit in the first quarter of the year. Just under two-thirds of these nonworkers cited job-market conditions as their reason for not seeking work, while the rest cited personal factors (such as age, education, or other personal handicap). (See table A-14.)

Industry Payroll Employment (Establishment Survey Data)

Employment in nonagricultural establishments rose by 345,000 in June, reaching 105.8 million, seasonally adjusted. Increases were widespread, occurring in all industry divisions except government. (See table B-1.)

After slowing in May, employment in the goods-producing sector resumed more vigorous growth. Construction employment rose by 55,000, and manufacturing jobs increased by 45,000. Within manufacturing, most of the over-the-month increase was in durable goods, particularly in fabricated metals and machinery.

Employment gains in the service-producing sector totaled 240,000 in June. Increases in services and retail trade industries were especially sharp, totaling 160,000 and 75,000, respectively. Smaller, but noteworthy, increases (25,000 each) also occurred in wholesale trade (especially in the distribution of durable goods) and transportation and public utilities (mostly in the transportation component). The continuing growth in these distributive industries reflects the strength in factory output. Employment in finance, insurance, and real estate rose by 15,000, with the gain concentrated in the real estate component.

Weekly Hours (Establishment Survey Data)

The average workweek for production or nonsupervisory workers on private nonagricultural payrolls edged up to 34.8 hours in June, seasonally adjusted, while the factory workweek and overtime were unchanged at 41.0 hours and 3.9 hours, respectively. The factory figures continue to be very high by historical standards. (See table B-2.)

The index of aggregate weekly hours of production or nonsupervisory workers on private nonagricultural payrolls, at 125.3 (1977=100), rose 0.7 percent, seasonally adjusted. The index for manufacturing was also up, by 0.4 percent, to 96.1. (See table B-5.)

Hourly and Weekly Earnings (Establishment Survey Data)

Average hourly earnings of private production or nonsupervisory workers were unchanged in June, seasonally adjusted, while average weekly earnings rose by nearly a dollar. Prior to seasonal adjustment, average hourly earnings declined by 2 cents to $9.23, and average weekly earnings increased by $3.00 to $323.05. (See table B-3.)

The Hourly Earnings Index (Establishment Survey Data)

The Hourly Earnings Index (HEI) was 178.5 (1977=100) in June, seasonally adjusted, a decrease of 0.1 percent from May. For the 12 months ended in June, the increase was 3.2 percent. In dollars of constant purchasing power, the HEI decreased 0.5 percent during the 12-month period ending in May. The HEI is computed so as to exclude the effects of two types of changes unrelated to underlying wage rate movements--fluctuations in manufacturing overtime and interindustry employment shifts. (See table B-4.)

The Employment Situation for July 1988 will be released on Friday, August 5, at 8:30 A.M. (EDT).

Explanatory Note

This news release presents statistics from two major surveys, the Current Population Survey (household survey) and the Current Employment Statistics Survey (establishment survey). The household survey provides the information on the labor force, total employment, and unemployment that appears in the A tables, marked HOUSEHOLD DATA. It is a sample survey of about 55,800 households that is conducted by the Bureau of the Census with most of the findings analyzed and published by the Bureau of Labor Statistics (BLS).

The establishment survey provides the information on the employment, hours, and earnings of workers on nonagricultural payrolls that appears in the B tables, marked ESTABLISHMENT DATA. This information is collected from payroll records by BLS in cooperation with State agencies. The sample includes over 300,000 establishments employing over 38 million people.

For both surveys, the data for a given month are actually collected for and relate to a particular week. In the household survey, unless otherwise indicated, it is the calendar week that contains the 12th day of the month, which is called the survey week. In the establishment survey, the reference week is the pay period including the 12th, which may or may not correspond directly to the calendar week.

The data in this release are affected by a number of technical factors, including definitions, survey differences, seasonal adjustments, and the inevitable variance in results between a survey of a sample and a census of the entire population. Each of these factors is explained below.

Coverage, definitions, and differences between surveys

The sample households in the household survey are selected so as to reflect the entire civilian noninstitutional population 16 years of age and older. Each person in a household is classified as employed, unemployed, or not in the labor force. Those who hold more than one job are classified according to the job at which they worked the most hours.

People are classified as *employed* if they did any work at all as paid civilians; worked in their own business or profession or on their own farm; or worked 15 hours or more in an enterprise operated by a member of their family, whether they were paid or not. People are also counted as employed if they were on unpaid leave because of illness, bad weather, disputes between labor and management, or personal reasons. Members of the Armed Forces stationed in the United States are also included in the employed total.

People are classified as *unemployed,* regardless of their eligibility for unemployment benefits or public assistance, if they meet all of the following criteria: They had no employment during the survey week; they were available for work at that time; and they made specific efforts to find employment sometime during the prior 4 weeks. Persons laid off from their former jobs and awaiting recall and those expecting to report to a job within 30 days need not be looking for work to be counted as unemployed.

The *labor force* equals the sum of the number employed and the number unemployed. The *unemployment rate* is the percentage of unemployed people in the labor force (civilian plus the resident Armed Forces). Table A-5 presents a special grouping of seven measures of unemployment based on varying definitions of unemployment and the labor force. The definitions are provided in the table. The most restrictive definition yields U-1 and the most comprehensive yields U-7. The overall unemployment rate is U-5a, while U-5b represents the same measure with a civilian labor force base.

Unlike the household survey, the establishment survey only counts wage and salary employees whose names appear on the payroll records of nonagricultural firms. As a result, there are many differences between the two surveys, among which are the following:

— The household survey, although based on a smaller sample, reflects a larger segment of the population; the establishment survey excludes agriculture, the self-employed, unpaid family workers, private household workers, and members of the resident Armed Forces;

— The household survey includes people on unpaid leave among the employed; the establishment survey does not;

— The household survey is limited to those 16 years of age and older; the establishment survey is not limited by age;

— The household survey has no duplication of individuals, because each individual is counted only once; in the establishment survey, employees working at more than one job or otherwise appearing on more than one payroll would be counted separately for each appearance.

Other differences between the two surveys are described in "Comparing Employment Estimates from Household and Payroll Surveys," which may be obtained from the BLS upon request.

Seasonal adjustment

Over the course of a year, the size of the Nation's labor force and the levels of employment and unemployment undergo sharp fluctuations due to such seasonal events as changes in weather, reduced or expanded production, harvests, major holidays, and the opening and closing of schools. For example, the labor force increases by a large number each June, when schools close and many young people enter the job market. The effect of such seasonal variation can be very large; over the course of a year, for example, seasonality may account for as much as 95 percent of the month-to-month changes in unemployment.

Because these seasonal events follow a more or less regular pattern each year, their influence on statistical trends can be eliminated by adjusting the statistics from month to month. These adjustments make nonseasonal developments, such as declines in economic activity or increases in the participation of women in the labor force, easier to spot. To return to the school's-out example, the large number of people entering the labor force each June is likely to obscure any other changes that have taken place since May, making it difficult to determine if the level of economic activity has risen or declined. However, because the effect of students finishing school in previous years is known, the statistics for the current year can be adjusted to allow for a comparable change. Insofar as the seasonal adjustment is made correctly, the adjusted figure provides a more useful tool with which to analyze changes in economic activity.

Measures of labor force, employment, and unemployment contain components such as age and sex. Statistics for all employees, production workers, average weekly hours, and average hourly earnings include components based on the employer's industry. All these statistics can be seasonally adjusted either by adjusting the total or by adjusting each of the components and combining them. The second procedure usually yields more accurate information and is therefore followed by BLS. For example, the seasonally adjusted figure for the labor force is the sum of eight seasonally adjusted civilian employment components, plus the resident Armed Forces total (not adjusted for seasonality), and four seasonally adjusted unemployment components; the total for unemployment is the sum of the four unemployment components; and the overall unemployment rate is derived by dividing the resulting estimate of total unemployment by the estimate of the labor force.

The numerical factors used to make the seasonal adjustments are recalculated regularly. For the household survey, the factors are calculated for the January-June period and again for the July-December period. The January revision is applied to data that have been published over the previous 5 years. For the establishment survey, updated factors for seasonal adjustment are calculated only once a year, along with the introduction of new benchmarks which are discussed at the end of the next section.

Sampling variability

Statistics based on the household and establishment surveys are subject to sampling error, that is, the estimate of the number of people employed and the other estimates drawn from these surveys probably differ from the figures that would be obtained from a complete census, even if the same questionnaires and procedures were used. In the household survey, the amount of the differences can be expressed in terms of standard errors. The numerical value of a standard error depends upon the size of the sample, the results of the survey, and other factors. However, the numerical value is always such that the chances are approximately 68 out of 100 that an estimate based on the sample will differ by no more than the standard error from the results of a complete census. The chances are approximately 90 out of 100 that an estimate based on the sample will differ by no more than 1.6 times the standard error from the results of a complete census. At approximately the 90-percent level of confidence—the confidence limits used by BLS in its analyses—the error for the monthly change in total employment is on the order of plus or minus 358,000; for total unemployment it is 224,000; and, for the overall unemployment rate, it is 0.19 percentage point. These figures do not mean that the sample results are off by these magnitudes but, rather, that the chances are approximately 90 out of 100 that the "true" level or rate would not be expected to differ from the estimates by more than these amounts.

Sampling errors for monthly surveys are reduced when the data are cumulated for several months, such as quarterly or annually. Also, as a general rule, the smaller the estimate, the larger the sampling error. Therefore, relatively speaking, the estimate of the size of the labor force is subject to less error than is the estimate of the number unemployed. And, among the unemployed, the sampling error for the jobless rate of adult men, for example, is much smaller than is the error for the jobless rate of teenagers. Specifically, the error on monthly change in the jobless rate for men is .25 percentage point; for teenagers, it is 1.29 percentage points.

In the establishment survey, estimates for the 2 most current months are based on incomplete returns; for this reason, these estimates are labeled preliminary in the tables. When all the returns in the sample have been received, the estimates are revised. In other words, data for the month of September are published in preliminary form in October and November and in final form in December. To remove errors that build up over time, a comprehensive count of the employed is conducted each year. The results of this survey are used to establish new benchmarks—comprehensive counts of employment—against which month-to-month changes can be measured. The new benchmarks also incorporate changes in the classification of industries and allow for the formation of new establishments.

Additional statistics and other information

In order to provide a broad view of the Nation's employment situation, BLS regularly publishes a wide variety of data in this news release. More comprehensive statistics are contained in *Employment and Earnings*, published each month by BLS. It is available for $8.50 per issue or $22.00 per year from the U.S. Government Printing Office, Washington, DC 20204. A check or money order made out to the Superintendent of Documents must accompany all orders.

Employment and Earnings also provides approximations of the standard errors for the household survey data published in this release. For unemployment and other labor force categories, the standard errors appear in tables B through J of its "Explanatory Notes." Measures of the reliability of the data drawn from the establishment survey and the actual amounts of revision due to benchmark adjustments are provided in tables M, O, P, and Q of that publication.

Table A-1. Employment status of the population, including Armed Forces in the United States, by sex

(Numbers in thousands)

Employment status and sex	Not seasonally adjusted			Seasonally adjusted[1]					
	June 1987	May 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988	June 1988
TOTAL									
Noninstitutional population[2]	184,421	186,088	186,247	184,421	185,705	185,847	185,964	186,088	186,247
Labor force[2]	122,871	122,489	124,713	121,326	123,064	122,639	123,055	122,692	123,157
Participation rate[3]	66.6	65.8	67.0	65.8	66.3	66.0	66.2	65.9	66.1
Total employed[2]	115,216	115,936	117,894	114,018	116,145	115,839	116,445	115,909	116,703
Employment-population ratio[4]	62.5	62.3	63.3	61.8	62.5	62.3	62.6	62.3	62.7
Resident Armed Forces	1,718	1,714	1,685	1,718	1,736	1,736	1,732	1,714	1,685
Civilian employed	113,498	114,222	116,209	112,300	114,409	114,103	114,713	114,195	115,018
Agriculture	3,661	3,292	3,546	3,192	3,226	3,204	3,228	3,035	3,085
Nonagricultural industries	109,837	110,930	112,663	109,108	111,182	110,899	111,485	111,160	111,933
Unemployed	7,655	6,553	6,819	7,308	6,938	6,801	6,610	6,783	6,455
Unemployment rate[5]	6.2	5.3	5.5	6.0	5.6	5.5	5.4	5.5	5.2
Not in labor force	61,550	63,599	61,534	63,095	62,621	63,208	62,909	63,396	63,090
Men, 16 years and over									
Noninstitutional population[2]	88,442	89,287	89,367	88,442	89,099	89,168	89,225	89,287	89,367
Labor force[2]	68,803	68,272	69,624	67,623	68,343	68,148	68,445	68,318	68,429
Participation rate[3]	77.8	76.5	77.9	76.5	76.7	76.4	76.7	76.5	76.6
Total employed[2]	64,604	64,696	65,996	63,543	64,636	64,332	64,892	64,583	64,934
Employment-population ratio[4]	73.0	72.5	73.8	71.8	72.5	72.1	72.7	72.3	72.7
Resident Armed Forces	1,559	1,553	1,523	1,559	1,577	1,573	1,569	1,553	1,523
Civilian employed	63,045	63,143	64,473	61,984	63,059	62,759	63,323	63,030	63,411
Unemployed	4,199	3,575	3,628	4,080	3,707	3,816	3,553	3,736	3,495
Unemployment rate[5]	6.1	5.2	5.2	6.0	5.4	5.6	5.2	5.5	5.1
Women, 16 years and over									
Noninstitutional population[2]	95,979	96,801	96,880	95,979	96,606	96,679	96,739	96,801	96,880
Labor force[2]	54,068	54,218	55,089	53,703	54,740	54,491	54,610	54,374	54,728
Participation rate[3]	56.3	56.0	56.9	56.0	56.7	56.4	56.5	56.2	56.5
Total employed[2]	50,612	51,240	51,898	50,475	51,509	51,507	51,553	51,327	51,769
Employment-population ratio[4]	52.7	52.9	53.6	52.6	53.3	53.3	53.3	53.0	53.4
Resident Armed Forces	159	161	162	159	159	163	163	161	162
Civilian employed	50,453	51,079	51,736	50,316	51,350	51,344	51,390	51,166	51,607
Unemployed	3,456	2,978	3,191	3,228	3,231	2,985	3,057	3,047	2,960
Unemployment rate[5]	6.4	5.5	5.8	6.0	5.9	5.5	5.6	5.6	5.4

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[1] The population and Armed Forces figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Includes members of the Armed Forces stationed in the United States.

[3] Labor force as a percent of the noninstitutional population.

[4] Total employment as a percent of the noninstitutional population.

[5] Unemployment as a percent of the labor force (including the resident Armed Forces).

Table A-2. Employment status of the civilian population by sex and age

(Numbers in thousands)

Employment status, sex, and age	Not seasonally adjusted			Seasonally adjusted[1]					
	June 1987	May 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988	June 1988
TOTAL									
Civilian noninstitutional population	182,703	184,374	184,562	182,703	183,969	184,111	184,232	184,374	184,562
Civilian labor force	121,153	120,775	123,028	119,608	121,348	120,903	121,323	120,978	121,472
Participation rate	66.3	65.5	66.7	65.5	66.0	65.7	65.9	65.6	65.8
Employed	113,498	114,222	116,209	112,300	114,409	114,103	114,713	114,195	115,018
Employment-population ratio[2]	62.1	62.0	63.0	61.5	62.2	62.0	62.3	61.9	62.3
Unemployed	7,655	6,553	6,819	7,308	6,938	6,801	6,610	6,783	6,455
Unemployment rate	6.3	5.4	5.5	6.1	5.7	5.6	5.4	5.6	5.3
Men, 20 years and over									
Civilian noninstitutional population	79,536	80,402	80,526	79,536	80,203	80,260	80,326	80,402	80,526
Civilian labor force	62,503	62,696	63,134	62,054	62,696	62,497	62,791	62,662	62,667
Participation rate	78.6	78.0	78.4	78.0	78.2	77.9	78.2	77.9	77.8
Employed	59,184	59,745	60,350	58,632	59,625	59,407	59,883	59,590	59,797
Employment-population ratio[2]	74.4	74.3	74.9	73.7	74.3	74.0	74.5	74.1	74.3
Agriculture	2,533	2,336	2,416	2,316	2,280	2,253	2,255	2,181	2,208
Nonagricultural industries	56,651	57,409	57,934	56,316	57,344	57,154	57,627	57,409	57,588
Unemployed	3,320	2,952	2,784	3,422	3,071	3,089	2,909	3,072	2,870
Unemployment rate	5.3	4.7	4.4	5.5	4.9	4.9	4.6	4.9	4.6
Women, 20 years and over									
Civilian noninstitutional population	88,546	89,382	89,502	88,546	89,178	89,261	89,307	89,382	89,502
Civilian labor force	49,502	50,426	50,420	49,722	50,640	50,542	50,612	50,441	50,642
Participation rate	55.9	56.4	56.3	56.2	56.8	56.6	56.7	56.4	56.6
Employed	46,896	48,018	47,972	47,088	48,005	48,132	48,170	47,960	48,169
Employment-population ratio[2]	53.0	53.7	53.6	53.2	53.8	53.9	53.9	53.7	53.8
Agriculture	711	644	704	619	654	656	692	587	616
Nonagricultural industries	46,186	47,373	47,268	46,469	47,351	47,476	47,478	47,373	47,553
Unemployed	2,606	2,409	2,448	2,634	2,635	2,411	2,442	2,481	2,473
Unemployment rate	5.3	4.8	4.9	5.3	5.2	4.8	4.8	4.9	4.9
Both sexes, 16 to 19 years									
Civilian noninstitutional population	14,621	14,580	14,534	14,621	14,588	14,591	14,598	14,590	14,534
Civilian labor force	9,147	7,652	9,474	7,832	8,011	7,865	7,919	7,875	8,163
Participation rate	62.6	52.4	65.2	53.6	54.9	53.9	54.2	54.0	56.2
Employed	7,418	6,459	7,887	6,580	6,779	6,564	6,660	6,645	7,051
Employment-population ratio[2]	50.7	44.3	54.3	45.0	46.5	45.0	45.6	45.5	48.5
Agriculture	418	312	425	257	293	295	280	267	260
Nonagricultural industries	7,000	6,147	7,461	6,323	6,486	6,269	6,380	6,378	6,791
Unemployed	1,729	1,193	1,588	1,252	1,232	1,301	1,259	1,230	1,112
Unemployment rate	18.9	15.6	16.8	16.0	15.4	16.5	15.9	15.6	13.6

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[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	June 1987	May 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988	June 1988
WHITE									
Civilian noninstitutional population	156,930	158,034	158,166	156,930	157,773	157,868	157,943	158,034	158,166
Civilian labor force	104,409	104,125	106,015	103,150	104,530	104,171	104,574	104,209	104,691
Participation rate	66.5	65.9	67.0	65.7	66.3	66.0	66.2	65.9	66.2
Employed	98,796	99,414	101,069	97,698	99,474	99,274	99,751	99,297	99,932
Employment-population ratio[2]	63.0	62.9	63.9	62.3	63.0	62.9	63.2	62.8	63.2
Unemployed	5,613	4,711	4,946	5,452	5,056	4,897	4,824	4,913	4,759
Unemployment rate	5.4	4.5	4.7	5.3	4.8	4.7	4.6	4.7	4.5
Men, 20 years and over									
Civilian labor force	54,605	54,703	55,085	54,227	54,650	54,522	54,699	54,618	54,662
Participation rate	79.0	78.4	78.8	78.4	78.5	78.2	78.5	78.3	78.2
Employed	52,097	52,523	53,016	51,591	52,389	52,245	52,538	52,314	52,491
Employment-population ratio[2]	75.3	75.3	75.9	74.6	75.2	75.0	75.4	75.0	75.1
Unemployed	2,508	2,180	2,069	2,636	2,260	2,277	2,161	2,304	2,171
Unemployment rate	4.6	4.0	3.8	4.9	4.1	4.2	4.0	4.2	4.0
Women, 20 years and over									
Civilian labor force	41,932	42,808	42,742	42,137	42,915	42,841	42,966	42,827	42,921
Participation rate	55.3	56.0	55.9	55.6	56.3	56.2	56.3	56.1	56.2
Employed	40,076	41,145	41,018	40,265	40,985	41,183	41,297	41,104	41,183
Employment-population ratio[2]	52.9	53.9	53.7	53.1	53.8	54.0	54.1	53.8	53.9
Unemployed	1,856	1,663	1,724	1,872	1,930	1,658	1,669	1,723	1,738
Unemployment rate	4.4	3.9	4.0	4.4	4.5	3.9	3.9	4.0	4.0
Both sexes, 16 to 19 years									
Civilian labor force	7,872	6,614	8,188	6,786	6,965	6,807	6,889	6,764	7,108
Participation rate	65.8	55.7	69.0	56.7	58.6	57.2	58.0	57.0	59.9
Employed	6,623	5,746	7,034	5,842	6,100	5,845	5,916	5,879	6,258
Employment-population ratio[2]	55.4	48.4	59.3	48.8	51.3	49.1	49.8	49.5	52.7
Unemployed	1,249	868	1,154	944	865	962	973	885	850
Unemployment rate	15.9	13.1	14.1	13.9	12.4	14.1	14.1	13.1	12.0
Men	16.0	13.0	14.2	14.8	12.2	15.7	14.5	13.8	12.8
Women	15.8	13.2	13.9	13.0	12.7	12.4	13.7	12.4	11.1
BLACK									
Civilian noninstitutional population	20,341	20,650	20,683	20,341	20,569	20,596	20,622	20,650	20,683
Civilian labor force	13,133	13,042	13,231	12,892	13,168	13,098	13,078	13,069	12,989
Participation rate	64.6	63.2	64.0	63.4	64.0	63.6	63.4	63.3	62.8
Employed	11,346	11,440	11,597	11,238	11,504	11,420	11,482	11,452	11,489
Employment-population ratio[2]	55.8	55.4	56.1	55.2	55.9	55.4	55.7	55.5	55.5
Unemployed	1,787	1,602	1,634	1,654	1,663	1,678	1,597	1,617	1,500
Unemployment rate	13.6	12.3	12.4	12.8	12.6	12.8	12.2	12.4	11.5
Men, 20 years and over									
Civilian labor force	6,063	6,123	6,128	6,003	6,166	6,127	6,163	6,107	6,064
Participation rate	75.2	74.7	74.6	74.5	75.6	75.0	75.3	74.5	73.8
Employed	5,375	5,465	5,518	5,319	5,472	5,429	5,511	5,449	5,458
Employment-population ratio[2]	66.7	66.7	67.2	66.0	67.1	66.4	67.3	66.5	66.5
Unemployed	688	658	610	684	694	698	652	658	606
Unemployment rate	11.3	10.7	10.0	11.4	11.3	11.4	10.6	10.8	10.0
Women, 20 years and over									
Civilian labor force	6,006	6,061	6,043	6,033	6,131	6,136	6,093	6,059	6,074
Participation rate	59.4	59.0	58.7	59.6	59.9	59.9	59.4	59.0	59.0
Employed	5,338	5,414	5,405	5,349	5,495	5,465	5,407	5,414	5,421
Employment-population ratio[2]	52.8	52.7	52.5	52.9	53.7	53.3	52.7	52.7	52.7
Unemployed	668	647	638	684	636	671	686	645	652
Unemployment rate	11.1	10.7	10.6	11.3	10.4	10.9	11.3	10.6	10.7
Both sexes, 16 to 19 years									
Civilian labor force	1,064	857	1,061	856	870	834	822	903	852
Participation rate	49.1	39.3	48.6	39.5	40.0	38.3	37.7	41.4	39.0
Employed	633	560	673	570	537	526	564	589	610
Employment-population ratio[2]	29.2	25.7	30.8	26.3	24.7	24.2	25.9	27.0	28.0
Unemployed	431	297	387	286	333	308	258	314	242
Unemployment rate	40.5	34.6	36.5	33.4	38.3	36.9	31.4	34.8	28.4
Men	36.4	33.1	35.1	31.4	42.0	39.0	27.6	33.3	30.4
Women	44.7	36.7	38.2	35.4	34.7	35.0	35.5	36.6	25.9

See footnotes at end of table.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin—Continued

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	June 1987	May 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988	June 1988
HISPANIC ORIGIN									
Civilian noninstitutional population	12,848	13,268	13,306	12,848	13,153	13,192	13,230	13,268	13,306
Civilian labor force	8,567	8,819	9,132	8,468	9,017	8,803	8,828	8,859	9,027
Participation rate	66.7	66.5	68.6	65.9	68.6	66.7	66.7	66.8	67.8
Employed	7,846	8,058	8,334	7,738	8,268	8,079	8,010	8,058	8,219
Employment-population ratio[2]	61.1	60.7	62.6	60.2	62.9	61.2	60.5	60.7	61.8
Unemployed	721	762	798	730	749	724	818	801	809
Unemployment rate	8.4	8.6	8.7	8.6	8.3	8.2	9.3	9.0	9.0

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

Table A-4. Selected employment indicators

(In thousands)

Category	Not seasonally adjusted			Seasonally adjusted					
	June 1987	May 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988	June 1988
CHARACTERISTIC									
Civilian employed, 16 years and over	113,498	114,222	116,209	112,300	114,409	114,103	114,713	114,195	115,018
Married men, spouse present	40,257	40,388	40,606	40,120	40,475	40,481	40,459	40,267	40,485
Married women, spouse present	27,974	28,681	28,426	28,282	28,707	28,805	28,859	28,567	28,713
Women who maintain families	5,987	6,034	6,055	6,011	6,157	6,160	6,055	5,957	6,085
MAJOR INDUSTRY AND CLASS OF WORKER									
Agriculture:									
Wage and salary workers	1,937	1,685	1,882	1,622	1,677	1,648	1,678	1,526	1,562
Self-employed workers	1,514	1,419	1,486	1,403	1,414	1,423	1,385	1,346	1,359
Unpaid family workers	211	188	217	162	114	142	155	159	167
Nonagricultural industries:									
Wage and salary workers	101,264	101,786	103,780	100,510	102,683	102,279	102,538	101,927	103,000
Government	16,515	17,090	16,672	16,920	16,948	16,908	17,015	16,887	17,064
Private industries	84,749	84,696	87,108	83,590	85,735	85,371	85,523	85,040	85,935
Private households	1,242	1,180	1,227	1,163	1,170	1,175	1,092	1,156	1,150
Other industries	83,507	83,516	85,881	82,427	84,565	84,196	84,431	83,884	84,786
Self-employed workers	8,286	8,846	8,568	8,293	8,312	8,366	8,637	8,917	8,577
Unpaid family workers	287	297	315	274	228	248	281	307	301
PERSONS AT WORK PART TIME[1]									
All industries:									
Part time for economic reasons	5,723	4,674	5,785	5,254	5,566	5,343	5,194	4,844	5,317
Slack work	2,234	2,096	2,251	2,345	2,478	2,520	2,236	2,227	2,364
Could only find part-time work	3,053	2,215	3,059	2,623	2,598	2,535	2,502	2,315	2,637
Voluntary part time	13,278	15,544	13,013	14,836	14,572	14,603	15,016	14,790	14,507
Nonagricultural industries:									
Part time for economic reasons	5,395	4,484	5,492	4,979	5,254	5,106	4,924	4,623	5,076
Slack work	2,075	2,008	2,098	2,176	2,327	2,325	2,121	2,120	2,199
Could only find part-time work	2,903	2,126	2,935	2,530	2,457	2,475	2,397	2,236	2,566
Voluntary part time	12,718	15,012	12,520	14,334	14,123	14,141	14,592	14,338	14,083

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial dispute.

Table A-5. Range of unemployment measures based on varying definitions of unemployment and the labor force, seasonally adjusted

(Percent)

Measure	Quarterly averages					Monthly data		
	1987			1988		1988		
	II	III	IV	I	II	Apr.	May	June
U-1 Persons unemployed 15 weeks or longer as a percent of the civilian labor force	1.7	1.6	1.5	1.4	1.3	1.3	1.3	1.2
U-2 Job losers as a percent of the civilian labor force	3.0	2.8	2.7	2.6	2.5	2.4	2.7	2.5
U-3 Unemployed persons 25 years and over as a percent of the civilian labor force	4.8	4.6	4.5	4.4	4.2	4.1	4.3	4.1
U-4 Unemployed full-time jobseekers as a percent of the full-time civilian labor force	5.9	5.6	5.5	5.4	5.1	5.1	5.2	4.9
U-5a Total unemployed as a percent of the labor force, including the resident Armed Forces	6.2	5.9	5.8	5.6	5.4	5.4	5.5	5.2
U-5b Total unemployed as a percent of the civilian labor force	6.3	6.0	5.9	5.7	5.5	5.4	5.6	5.3
U-6 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons as a percent of the civilian labor force less 1/2 of the part-time labor force	8.5	8.2	8.1	8.0	7.6	7.6	7.6	7.5
U-7 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons plus discouraged workers as a percent of the civilian labor force plus discouraged workers less 1/2 of the part-time labor force	9.3	9.0	8.8	8.8	8.3	N.A.	N.A.	N.A.

N.A. = not available.

Table A-6. Selected unemployment indicators, seasonally adjusted

Category	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	June 1987	May 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988	June 1988
CHARACTERISTIC									
Total, 16 years and over	7,308	6,783	6,455	6.1	5.7	5.6	5.4	5.6	5.3
Men, 16 years and over	4,080	3,736	3,495	6.2	5.6	5.7	5.3	5.6	5.2
Men, 20 years and over	3,422	3,072	2,870	5.5	4.9	4.9	4.6	4.9	4.6
Women, 16 years and over	3,226	3,047	2,960	6.0	5.9	5.5	5.6	5.6	5.4
Women, 20 years and over	2,634	2,481	2,473	5.3	5.2	4.8	4.8	4.9	4.9
Both sexes, 16 to 19 years	1,252	1,230	1,112	16.0	15.4	16.5	15.9	15.6	13.6
Married men, spouse present	1,673	1,359	1,311	4.0	3.4	3.4	3.0	3.3	3.1
Married women, spouse present	1,190	1,157	1,117	4.0	4.1	4.0	3.8	3.9	3.7
Women who maintain families	629	546	515	9.5	8.3	7.5	8.7	8.4	7.8
Full-time workers	6,000	5,418	5,111	5.9	5.3	5.3	5.1	5.2	4.9
Part-time workers	1,282	1,341	1,345	7.3	7.9	7.7	7.4	7.7	7.8
Labor force time lost[2]	—	—	—	7.1	6.6	6.5	6.2	6.4	6.3
INDUSTRY									
Nonagricultural private wage and salary workers	5,476	5,099	4,678	6.1	5.7	5.6	5.3	5.7	5.4
Goods-producing industries	2,036	1,925	1,758	7.1	6.9	6.5	6.5	6.6	6.0
Mining	83	80	51	9.5	7.8	7.9	8.4	10.4	6.7
Construction	733	660	654	11.7	11.0	10.7	10.6	10.5	10.2
Manufacturing	1,220	1,185	1,054	5.7	5.6	5.2	5.3	5.4	4.8
Durable goods	692	636	569	5.4	5.9	5.2	4.8	4.9	4.4
Nondurable goods	528	548	485	6.1	5.3	5.3	6.0	6.0	5.4
Service-producing industries	3,440	3,174	3,120	5.7	5.1	5.2	4.7	5.2	5.1
Transportation and public utilities	295	281	273	4.8	3.6	4.2	3.8	4.4	4.1
Wholesale and retail trade	1,621	1,430	1,351	7.1	6.4	6.8	5.9	6.3	5.9
Finance and service industries	1,524	1,463	1,497	4.9	4.5	4.2	4.1	4.6	4.6
Government workers	601	509	499	3.4	2.8	2.8	3.0	2.9	2.8
Agricultural wage and salary workers	166	246	168	9.3	10.2	11.0	10.6	13.9	9.7

[1] Unemployment as a percent of the civilian labor force.

[2] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

Table A-7. Duration of unemployment

(Numbers in thousands)

Weeks of unemployment	Not seasonally adjusted			Seasonally adjusted					
	June 1987	May 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988	June 1988
DURATION									
Less than 5 weeks	3,754	3,035	3,661	3,138	3,084	3,009	3,125	3,075	3,066
5 to 14 weeks	1,856	1,753	1,631	2,151	2,145	2,101	1,956	2,110	1,890
15 weeks and over	2,045	1,765	1,527	2,029	1,740	1,722	1,540	1,609	1,512
15 to 26 weeks	979	891	732	973	841	887	725	784	727
27 weeks and over	1,067	874	795	1,056	899	835	816	825	785
Average (mean) duration, in weeks	14.2	14.4	12.5	14.7	14.4	13.7	13.4	13.8	12.9
Median duration, in weeks	5.2	5.9	4.7	6.6	6.4	6.6	5.6	5.9	6.0
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 5 weeks	49.0	46.3	53.7	42.9	44.3	44.0	47.2	45.3	47.4
5 to 14 weeks	24.2	26.8	23.9	29.4	30.8	30.8	29.5	31.1	29.2
15 weeks and over	26.7	26.9	22.4	27.7	25.0	25.2	23.3	23.7	23.4
15 to 26 weeks	12.8	13.6	10.7	13.3	12.1	13.0	10.9	11.5	11.2
27 weeks and over	13.9	13.3	11.7	14.4	12.9	12.2	12.3	12.1	12.1

Table A-8. Reason for unemployment

(Numbers in thousands)

Reasons	Not seasonally adjusted			Seasonally adjusted					
	June 1987	May 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988	June 1988
NUMBER OF UNEMPLOYED									
Job losers	3,305	3,058	2,848	3,554	3,207	3,139	2,916	3,236	3,059
On layoff	776	698	726	919	884	899	821	793	863
Other job losers	2,529	2,360	2,122	2,635	2,323	2,240	2,095	2,443	2,196
Job leavers	896	820	884	959	961	1,075	993	926	944
Reentrants	2,162	1,835	1,876	1,980	1,951	1,756	1,784	1,789	1,723
New entrants	1,292	841	1,210	854	864	887	915	807	777
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	43.1	46.7	41.7	48.4	45.9	45.8	44.1	47.9	47.0
On layoff	10.1	10.7	10.6	12.5	12.7	13.1	12.4	11.7	13.3
Other job losers	33.0	36.0	31.1	35.9	33.3	32.7	31.7	36.2	33.8
Job leavers	11.7	12.5	13.0	13.1	13.8	15.7	15.0	13.7	14.5
Reentrants	28.2	28.0	27.5	26.9	27.9	25.6	27.0	26.5	26.5
New entrants	16.9	12.8	17.8	11.6	12.4	12.9	13.8	11.9	11.9
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE									
Job losers	2.7	2.6	2.3	3.0	2.6	2.6	2.4	2.7	2.5
Job leavers	.7	.7	.7	.8	.8	.9	.8	.8	.8
Reentrants	1.8	1.5	1.5	1.7	1.6	1.5	1.5	1.5	1.4
New entrants	1.1	.7	1.0	.7	.7	.7	.8	.7	.6

Table A-9. Unemployed persons by sex and age, seasonally adjusted

Sex and age	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	June 1987	May 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988	June 1988
Total, 16 years and over	7,308	6,783	6,455	6.1	5.7	5.6	5.4	5.6	5.3
16 to 24 years	2,756	2,519	2,341	12.1	11.1	11.7	11.2	11.3	10.3
16 to 19 years	1,252	1,230	1,112	16.0	15.4	16.5	15.9	15.6	13.6
16 to 17 years	623	509	512	18.8	17.4	17.6	17.8	16.1	15.4
18 to 19 years	657	720	627	14.5	13.9	15.8	14.2	15.3	12.9
20 to 24 years	1,504	1,289	1,229	10.0	8.7	9.1	8.7	8.9	8.4
25 years and over	4,502	4,251	4,077	4.7	4.5	4.2	4.1	4.3	4.1
25 to 54 years	4,042	3,744	3,654	4.9	4.7	4.5	4.3	4.5	4.4
55 years and over	475	520	442	3.2	3.3	2.9	2.9	3.5	2.9
Men, 16 years and over	4,080	3,736	3,495	6.2	5.6	5.7	5.3	5.6	5.2
16 to 24 years	1,474	1,354	1,247	12.4	11.3	12.1	11.2	11.6	10.5
16 to 19 years	658	664	625	16.4	15.6	17.8	15.8	16.2	14.7
16 to 17 years	325	275	290	19.1	16.9	18.5	17.2	16.7	17.0
18 to 19 years	357	388	360	15.4	14.7	17.3	14.7	15.8	14.2
20 to 24 years	816	690	622	10.4	9.0	9.1	8.8	9.1	8.2
25 years and over	2,585	2,363	2,235	4.8	4.3	4.3	4.1	4.3	4.1
25 to 54 years	2,271	2,051	1,940	5.0	4.5	4.5	4.2	4.4	4.2
55 years and over	301	323	279	3.4	3.4	3.4	3.1	3.7	3.2
Women, 16 years and over	3,228	3,047	2,960	6.0	5.9	5.5	5.6	5.6	5.4
16 to 24 years	1,282	1,166	1,094	11.7	10.8	11.3	11.3	11.0	10.0
16 to 19 years	594	566	487	15.5	15.1	15.2	16.0	15.0	12.4
16 to 17 years	296	234	222	18.4	18.0	16.6	18.4	15.5	13.7
18 to 19 years	300	332	267	13.6	13.1	14.2	13.7	14.7	11.6
20 to 24 years	688	600	607	9.6	8.4	9.1	8.7	8.8	8.7
25 years and over	1,917	1,888	1,842	4.5	4.7	4.1	4.2	4.3	4.2
25 to 54 years	1,771	1,693	1,714	4.9	4.9	4.4	4.5	4.5	4.6
55 years and over	174	197	163	2.8	3.1	2.3	2.7	3.2	2.6

[1] Unemployment as a percent of the civilian labor force.

Table A-10. Employment status of black and other workers

(Numbers in thousands)

Employment status	Not seasonally adjusted			Seasonally adjusted[1]					
	June 1987	May 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988	June 1988
Civilian noninstitutional population	25,773	26,340	26,396	25,773	26,196	26,243	26,289	26,340	26,396
Civilian labor force	16,744	16,650	17,013	16,474	16,779	16,779	16,733	16,698	16,735
Participation rate	65.0	63.2	64.5	63.9	64.1	63.9	63.7	63.4	63.4
Employed	14,702	14,807	15,140	14,582	14,884	14,853	14,939	14,818	15,017
Employment-population ratio[2]	57.0	56.2	57.4	56.6	56.8	56.6	56.8	56.3	56.9
Unemployed	2,041	1,843	1,873	1,892	1,895	1,926	1,795	1,879	1,718
Unemployment rate	12.2	11.1	11.0	11.5	11.3	11.5	10.7	11.3	10.3
Not in labor force	9,029	9,690	9,383	9,299	9,417	9,464	9,556	9,642	9,661

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-11. Occupational status of the employed and unemployed, not seasonally adjusted

(Numbers in thousands)

Occupation	Civilian employed		Unemployed		Unemployment rate	
	June 1987	June 1988	June 1987	June 1988	June 1987	June 1988
Total, 16 years and over[1]	113,498	116,209	7,655	6,819	6.3	5.5
Managerial and professional specialty	27,233	29,181	662	601	2.4	2.0
Executive, administrative, and managerial	13,246	14,569	338	309	2.5	2.1
Professional specialty	13,986	14,612	324	292	2.3	2.0
Technical, sales, and administrative support	35,386	35,310	1,661	1,478	4.5	4.0
Technicians and related support	3,405	3,388	94	93	2.7	2.7
Sales occupations	13,703	13,885	698	664	4.8	4.6
Administrative support, including clerical	18,278	18,038	869	721	4.5	3.8
Service occupations	15,219	15,390	1,298	1,162	7.9	7.0
Private household	917	941	53	59	5.5	5.9
Protective service	2,003	1,970	120	70	5.6	3.4
Service, except private household and protective	12,300	12,479	1,125	1,034	8.4	7.6
Precision production, craft, and repair	13,695	14,087	865	711	5.9	4.8
Mechanics and repairers	4,389	4,582	178	150	3.9	3.2
Construction trades	5,087	5,400	460	361	8.3	6.3
Other precision production, craft, and repair	4,218	4,105	227	200	5.1	4.7
Operators, fabricators, and laborers	17,755	18,238	1,626	1,409	8.4	7.2
Machine operators, assemblers, and inspectors	8,024	8,346	697	592	8.0	6.6
Transportation and material moving occupations	4,750	4,902	315	282	6.2	5.4
Handlers, equipment cleaners, helpers, and laborers	4,981	4,990	614	535	11.0	9.7
Construction laborers	855	876	156	165	15.5	15.8
Other handlers, equipment cleaners, helpers, and laborers	4,126	4,113	458	370	10.0	8.3
Farming, forestry, and fishing	4,210	4,003	225	212	5.1	5.0

[1] Persons with no previous work experience and those whose last job was . in the Armed Forces are included in the unemployed total.

Table A-12. Employment status of male Vietnam-era veterans and nonveterans by age, not seasonally adjusted

(Numbers in thousands)

Veteran status and age	Civilian noninstitutional population		Civilian labor force							
			Total		Employed		Unemployed			
							Number		Percent of labor force	
	June 1987	June 1988	June 1987	June 1988	June 1987	June 1988	June 1987	June 1988	June 1987	June 1988
VIETNAM-ERA VETERANS										
Total, 30 years and over	7,840	7,902	7,235	7,249	6,901	7,011	334	238	4.6	3.3
30 to 44 years	6,235	5,942	5,956	5,665	5,663	5,467	293	198	4.9	3.5
30 to 34 years	935	701	881	668	794	613	87	55	9.9	8.2
35 to 39 years	2,626	2,178	2,523	2,058	2,399	1,994	124	64	4.9	3.1
40 to 44 years	2,674	3,063	2,552	2,939	2,470	2,860	82	79	3.2	2.7
45 years and over	1,605	1,960	1,279	1,584	1,238	1,544	41	40	3.2	2.5
NONVETERANS										
Total, 30 to 44 years	19,414	20,367	18,343	19,190	17,554	18,469	789	721	4.3	3.8
30 to 34 years	8,843	9,079	8,476	8,596	8,067	8,232	409	364	4.8	4.2
35 to 39 years	6,184	6,799	5,785	6,434	5,584	6,202	201	232	3.5	3.6
40 to 44 years	4,387	4,489	4,082	4,160	3,903	4,035	179	125	4.4	3.0

NOTE: Male Vietnam-era veterans are men who served in the Armed Forces between August 5, 1964 and May 7, 1975. Nonveterans are men who have never served in the Armed Forces; published data are limited to those 30 to 44 years of age, the group that most closely corresponds to the bulk of the Vietnam-era veteran population.

Table A-13. Employment status of the civilian population for eleven large States

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	June 1987	May. 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May. 1988	June 1988
California									
Civilian noninstitutional population	20,521	20,931	20,972	20,521	20,824	20,860	20,894	20,931	20,972
Civilian labor force	13,808	14,066	14,176	13,737	14,032	13,976	14,077	14,142	14,105
Employed	13,059	13,251	13,405	12,970	13,279	13,272	13,362	13,251	13,315
Unemployed	749	815	771	767	753	704	715	891	790
Unemployment rate	5.4	5.8	5.4	5.6	5.4	5.0	5.1	6.3	5.6
Florida									
Civilian noninstitutional population	9,421	9,648	9,671	9,421	9,588	9,609	9,628	9,648	9,671
Civilian labor force	5,884	6,104	6,142	5,859	6,013	6,066	6,093	6,086	6,115
Employed	5,571	5,816	5,847	5,558	5,695	5,771	5,773	5,780	5,831
Unemployed	313	288	295	301	318	295	320	306	284
Unemployment rate	5.3	4.7	4.8	5.1	5.3	4.9	5.3	5.0	4.6
Illinois									
Civilian noninstitutional population	8,737	8,776	8,781	8,737	8,767	8,770	8,773	8,776	8,781
Civilian labor force	5,853	5,731	5,808	5,757	5,839	5,749	5,746	5,733	5,709
Employed	5,399	5,336	5,405	5,328	5,401	5,330	5,332	5,352	5,332
Unemployed	454	395	404	429	438	419	414	381	377
Unemployment rate	7.8	6.9	6.9	7.5	7.5	7.3	7.2	6.6	6.6
Massachusetts									
Civilian noninstitutional population	4,587	4,600	4,603	4,587	4,598	4,599	4,599	4,600	4,603
Civilian labor force	3,148	3,106	3,217	3,118	3,147	3,190	3,163	3,124	3,188
Employed	3,050	3,022	3,106	3,019	3,041	3,096	3,072	3,036	3,076
Unemployed	97	84	110	99	106	94	91	88	112
Unemployment rate	3.1	2.7	3.4	3.2	3.4	2.9	2.9	2.8	3.5
Michigan									
Civilian noninstitutional population	6,929	6,986	6,993	6,929	6,972	6,977	6,981	6,986	6,993
Civilian labor force	4,577	4,507	4,594	4,533	4,530	4,488	4,556	4,498	4,553
Employed	4,169	4,212	4,267	4,149	4,149	4,117	4,220	4,205	4,253
Unemployed	409	295	326	384	381	371	336	293	300
Unemployment rate	8.9	6.5	7.1	8.5	8.4	8.3	7.4	6.5	6.6
New Jersey									
Civilian noninstitutional population	6,001	6,034	6,039	6,001	6,027	6,029	6,032	6,034	6,039
Civilian labor force	4,042	3,966	4,024	3,974	3,991	3,985	3,969	3,922	3,955
Employed	3,875	3,817	3,878	3,809	3,856	3,826	3,831	3,776	3,810
Unemployed	167	149	147	165	135	159	138	146	145
Unemployment rate	4.1	3.8	3.6	4.2	3.4	4.0	3.5	3.7	3.7
New York									
Civilian noninstitutional population	13,755	13,770	13,774	13,755	13,769	13,770	13,769	13,770	13,774
Civilian labor force	8,540	8,270	8,556	8,503	8,505	8,465	8,363	8,429	8,516
Employed	8,149	7,929	8,266	8,108	8,172	8,142	8,072	8,071	8,220
Unemployed	391	340	289	395	333	323	291	358	296
Unemployment rate	4.6	4.1	3.4	4.6	3.9	3.8	3.5	4.2	3.5
North Carolina									
Civilian noninstitutional population	4,807	4,875	4,883	4,807	4,858	4,864	4,869	4,875	4,883
Civilian labor force	3,296	3,291	3,343	3,272	3,300	3,296	3,300	3,297	3,318
Employed	3,136	3,182	3,227	3,123	3,180	3,171	3,177	3,183	3,213
Unemployed	161	109	116	149	120	125	123	114	105
Unemployment rate	4.9	3.3	3.5	4.6	3.6	3.8	3.7	3.5	3.2
Ohio									
Civilian noninstitutional population	8,154	8,194	8,199	8,154	8,184	8,188	8,190	8,194	8,199
Civilian labor force	5,307	5,243	5,325	5,251	5,355	5,369	5,277	5,248	5,271
Employed	4,922	4,941	5,002	4,874	5,013	4,958	4,945	4,922	4,959
Unemployed	385	302	323	377	342	411	332	326	312
Unemployment rate	7.3	5.8	6.1	7.2	6.4	7.7	6.3	6.2	5.9

See footnotes at end of table.

Table A-13. Employment status of the civilian population for eleven large States—Continued

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	June 1987	May. 1988	June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May. 1988	June 1988
Pennsylvania									
Civilian noninstitutional population	9,289	9,317	9,322	9,289	9,312	9,314	9,315	9,317	9,322
Civilian labor force	5,719	5,635	5,786	5,638	5,786	5,728	5,753	5,661	5,702
Employed	5,365	5,355	5,461	5,314	5,486	5,435	5,477	5,375	5,410
Unemployed	355	279	325	324	300	293	276	286	292
Unemployment rate	6.2	5.0	5.6	5.7	5.2	5.1	4.8	5.1	5.1
Texas									
Civilian noninstitutional population	12,023	12,061	12,067	12,023	12,053	12,056	12,058	12,061	12,067
Civilian labor force	8,352	8,334	8,597	8,270	8,306	8,252	8,334	8,372	8,518
Employed	7,549	7,729	7,911	7,559	7,610	7,582	7,711	7,770	7,926
Unemployed	803	605	686	711	696	670	623	602	592
Unemployment rate	9.6	7.3	8.0	8.6	8.4	8.1	7.5	7.2	6.9

[1] These are the official Bureau of Labor Statistics' estimates used in the administration of Federal fund allocation programs.

[2] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and the seasonally adjusted columns.

Table A-14. Persons not in the labor force by reason, sex, and race, quarterly averages

(In thousands)

Reason, sex, and race	Not seasonally adjusted		Seasonally adjusted				
	1987	1988	1987			1988	1988
	II	II	II	III	IV	I	II
TOTAL							
Total not in labor force	62,795	63,034	62,901	62,963	62,899	62,825	63,131
Do not want a job now	56,651	57,870	57,008	57,490	57,408	57,414	58,015
Current activity: Going to school	5,711	5,831	6,403	6,388	6,414	6,325	6,352
Ill, disabled	4,319	4,587	4,193	4,426	4,467	4,254	4,464
Keeping house	25,750	25,949	25,550	25,646	25,513	25,289	25,756
Retired	16,348	16,889	16,250	16,317	16,508	16,862	16,784
Other activity	4,523	4,614	4,611	4,713	4,507	4,684	4,659
Want a job now	6,144	5,590	5,871	5,802	5,462	5,510	5,313
Reason not looking: School attendance	1,899	1,698	1,470	1,556	1,389	1,310	1,276
Ill health, disability	906	842	914	847	834	850	844
Home responsibilities	1,283	1,175	1,325	1,274	1,234	1,182	1,215
Think cannot get a job	971	842	1,048	992	910	1,027	910
Job-market factors[1]	667	561	694	635	581	700	589
Personal factors[2]	304	281	354	357	329	327	321
Other reasons[3]	1,083	1,032	1,114	1,132	1,094	1,141	1,068
Men							
Total not in labor force	20,512	20,729	20,681	20,811	20,845	20,856	20,896
Do not want a job now	18,221	18,636	18,585	18,945	18,878	18,997	18,854
Want a job now	2,291	2,092	2,062	2,064	1,918	1,971	1,872
Reason not looking: School attendance	989	914	750	773	737	633	674
Ill health, disability	464	376	463	416	414	406	370
Think cannot get a job	408	379	428	431	358	462	403
Other reasons[3]	429	424	421	444	409	471	425
Women							
Total not in labor force	42,283	42,305	42,220	42,152	42,055	41,970	42,235
Do not want a job now	38,430	39,234	38,423	38,545	38,530	38,417	39,161
Want a job now	3,853	3,498	3,809	3,738	3,545	3,539	3,440
Reason not looking: School attendance	909	784	720	784	653	677	602
Ill health, disability	444	467	451	431	421	444	474
Home responsibilities	1,283	1,175	1,325	1,274	1,234	1,182	1,215
Think cannot get a job	563	463	619	561	552	566	507
Other reasons	654	609	693	688	685	670	643
White							
Total not in labor force	53,523	53,415	53,627	53,771	53,679	53,455	53,557
Do not want a job now	48,983	49,344	49,284	49,536	49,564	49,536	49,640
Want a job now	4,540	4,071	4,344	4,252	4,045	4,020	3,883
Reason not looking: School attendance	1,451	1,243	1,093	1,062	986	945	905
Ill health, disability	678	636	683	648	646	644	637
Home responsibilities	891	795	959	948	909	837	858
Think cannot get a job	666	554	714	643	620	697	593
Other reasons[3]	854	843	896	951	884	897	891
Black							
Total not in labor force	7,433	7,580	7,457	7,326	7,294	7,406	7,606
Do not want a job now	6,090	6,288	6,169	6,088	6,083	6,094	6,372
Want a job now	1,342	1,292	1,294	1,237	1,210	1,320	1,242
Reason not looking: School attendance	372	373	315	333	341	351	312
Ill health, disability	201	200	193	168	165	195	186
Home responsibilities	332	336	313	275	304	310	318
Think cannot get a job	269	231	298	315	237	286	262
Other reasons[3]	168	152	175	145	163	198	164

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[1] Job-market factors include "could not find job" and "thinks no job available."

[2] Personal factors include "employers think too young or old," "lacks education or training," and "other personal handicap."

[3] Includes small number of men not looking for work because of "home responsibilities."

Table B-1. Employees on nonagricultural payrolls by industry

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	June 1987	Apr. 1988	May 1988p/	June 1988p/	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988p/	June 1988p/
Total	102,910	105,159	105,969	106,709	102,078	104,729	105,020	105,281	105,502	105,848
Total private	85,861	87,505	88,273	89,346	85,094	87,475	87,700	87,973	88,144	88,547
Goods_producing industries	24,988	25,180	25,468	25,880	24,684	25,271	25,330	25,435	25,464	25,569
Mining	721	729	733	743	719	731	733	737	737	741
Oil and gas extraction	400.5	414.9	416.8	422.1	404	415	419	421	424	426
Construction	5,176	5,081	5,290	5,495	4,983	5,150	5,192	5,238	5,238	5,294
General building contractors	1,358.6	1,348.0	1,389.8	1,449.3	1,319	1,377	1,383	1,400	1,395	1,408
Manufacturing	19,091	19,370	19,445	19,642	18,982	19,390	19,405	19,460	19,489	19,534
Production workers	13,024	13,213	13,272	13,432	12,939	13,249	13,251	13,280	13,303	13,349
Durable goods	11,234	11,433	11,474	11,575	11,166	11,404	11,411	11,459	11,475	11,508
Production workers	7,472	7,618	7,654	7,736	7,417	7,599	7,598	7,632	7,648	7,683
Lumber and wood products	753.9	743.7	755.6	773.8	736	756	755	758	756	756
Furniture and fixtures	514.8	534.4	534.5	537.1	516	535	534	535	537	539
Stone, clay, and glass products	592.4	583.8	590.9	599.1	580	584	585	587	585	586
Primary metal industries	750.8	775.7	779.2	786.1	746	770	772	773	777	781
Blast furnaces and basic steel products	272.3	280.9	281.6	282.8	271	280	281	281	281	281
Fabricated metal products	1,406.6	1,439.2	1,447.5	1,462.0	1,400	1,438	1,439	1,444	1,448	1,456
Machinery, except electrical	2,022.8	2,115.1	2,122.3	2,142.7	2,013	2,091	2,099	2,111	2,118	2,132
Electrical and electronic equipment	2,071.9	2,108.4	2,106.8	2,124.1	2,066	2,112	2,115	2,117	2,115	2,118
Transportation equipment	2,052.5	2,044.8	2,048.6	2,055.0	2,047	2,031	2,025	2,045	2,049	2,051
Motor vehicles and equipment	875.4	848.4	854.2	858.8	867	837	835	848	852	851
Instruments and related products	696.9	705.7	707.2	711.1	694	705	705	706	709	708
Miscellaneous manufacturing	371.0	381.9	380.9	384.1	368	382	382	383	381	381
Nondurable goods	7,857	7,937	7,971	8,067	7,816	7,986	7,994	8,001	8,014	8,026
Production workers	5,552	5,595	5,618	5,696	5,522	5,650	5,653	5,648	5,655	5,666
Food and kindred products	1,624.2	1,598.8	1,605.0	1,652.5	1,621	1,649	1,647	1,648	1,644	1,649
Tobacco manufactures	51.4	50.5	49.1	50.1	55	54	54	54	52	53
Textile mill products	727.7	726.5	728.4	728.4	724	732	729	727	728	725
Apparel and other textile products	1,109.0	1,101.8	1,103.8	1,108.0	1,098	1,104	1,106	1,100	1,100	1,097
Paper and allied products	683.5	684.0	686.7	695.3	677	686	687	687	689	689
Printing and publishing	1,506.6	1,555.5	1,556.6	1,566.0	1,505	1,544	1,548	1,554	1,558	1,564
Chemicals and allied products	1,020.7	1,052.7	1,058.4	1,070.5	1,014	1,049	1,052	1,056	1,061	1,064
Petroleum and coal products	167.8	164.1	167.1	168.3	165	165	164	165	166	165
Rubber and misc. plastics products	821.2	865.6	869.8	879.2	815	856	860	864	870	873
Leather and leather products	144.4	145.1	146.0	148.7	142	147	147	146	146	147
Service-producing industries	77,922	79,979	80,501	80,829	77,394	79,458	79,690	79,846	80,038	80,279
Transportation and public utilities	5,398	5,511	5,561	5,615	5,363	5,513	5,530	5,543	5,558	5,581
Transportation	3,175	3,275	3,318	3,350	3,153	3,272	3,285	3,298	3,311	3,330
Communication and public utilities	2,223	2,236	2,243	2,265	2,210	2,241	2,245	2,245	2,247	2,251
Wholesale trade	5,889	6,065	6,111	6,175	5,860	6,035	6,061	6,089	6,116	6,142
Durable goods	3,450	3,603	3,635	3,672	3,434	3,573	3,591	3,610	3,635	3,654
Nondurable goods	2,439	2,462	2,476	2,503	2,426	2,462	2,470	2,479	2,481	2,488
Retail trade	18,629	18,883	19,124	19,354	18,481	19,045	19,050	19,093	19,124	19,200
General merchandise stores	2,358.3	2,448.9	2,462.2	2,481.9	2,418	2,561	2,543	2,546	2,541	2,546
Food stores	2,968.7	3,015.1	3,041.5	3,084.9	2,962	3,029	3,044	3,049	3,054	3,076
Automotive dealers and service stations	2,022.9	2,055.4	2,074.2	2,099.2	2,001	2,047	2,055	2,064	2,068	2,076
Eating and drinking places	6,311.6	6,313.3	6,450.2	6,566.5	6,109	6,291	6,319	6,326	6,336	6,357
Finance, insurance, and real estate	6,616	6,628	6,651	6,729	6,553	6,636	6,651	6,650	6,650	6,665
Finance	3,301	3,292	3,292	3,322	3,280	3,305	3,306	3,302	3,299	3,302
Insurance	2,025	2,063	2,066	2,075	2,019	2,053	2,060	2,065	2,066	2,069
Real estate	1,290	1,273	1,293	1,332	1,254	1,278	1,285	1,283	1,285	1,294
Services	24,341	25,238	25,358	25,593	24,153	24,975	25,078	25,163	25,232	25,390
Business services	5,188.8	5,381.9	5,431.0	5,501.6	5,164	5,385	5,405	5,420	5,442	5,474
Health services	6,831.3	7,112.1	7,142.5	7,226.5	6,806	7,056	7,088	7,126	7,150	7,198
Government	17,051	17,654	17,696	17,363	16,984	17,254	17,320	17,308	17,358	17,301
Federal	2,976	2,963	2,972	2,979	2,939	2,972	2,970	2,963	2,960	2,944
State	3,832	4,150	4,098	3,920	3,946	4,014	4,031	4,041	4,041	4,037
Local	10,243	10,541	10,626	10,464	10,099	10,268	10,319	10,304	10,357	10,320

p = preliminary.

Table B-2. Average weekly hours of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted					
	June 1987	Apr. 1988	May 1988p/	June 1988p/	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988p/	June 1988p/
Total private	35.0	34.7	34.6	35.0	34.7	34.8	34.6	34.9	34.7	34.8
Mining	42.3	42.8	42.1	42.3	(2)	(2)	(2)	(2)	(2)	(2)
Construction	38.1	37.9	38.3	38.7	(2)	(2)	(2)	(2)	(2)	(2)
Manufacturing	41.1	41.0	40.9	41.1	41.0	41.0	40.9	41.2	41.0	41.0
Overtime hours	3.7	3.7	3.7	3.9	3.7	3.7	3.7	3.9	3.9	3.9
Durable goods	41.7	41.7	41.7	41.9	41.5	41.5	41.5	42.0	41.8	41.7
Overtime hours	3.8	4.0	4.0	4.1	3.8	3.8	3.8	4.2	4.2	4.1
Lumber and wood products	41.3	40.6	40.4	40.7	40.6	40.3	40.1	40.6	40.0	40.0
Furniture and fixtures	40.0	39.1	39.0	39.2	40.0	39.5	39.3	39.5	39.4	39.2
Stone, clay, and glass products	42.5	42.5	42.8	42.7	42.0	42.3	42.3	42.5	42.3	42.3
Primary metal industries	43.1	43.5	43.6	43.9	43.0	43.1	43.3	43.5	43.7	43.8
Blast furnaces and basic steel products	43.4	44.0	43.9	45.1	43.2	43.8	43.7	43.8	43.9	44.9
Fabricated metal products	41.7	41.7	41.7	42.0	41.6	41.6	41.6	42.0	41.9	41.9
Machinery, except electrical	42.4	42.6	42.4	42.5	42.3	42.6	42.5	42.8	42.6	42.4
Electrical and electronic equipment	41.0	40.8	40.7	41.0	40.9	40.9	40.9	41.2	41.0	41.0
Transportation equipment	41.9	42.9	43.1	42.8	41.9	42.0	42.1	43.0	43.1	42.8
Motor vehicles and equipment	42.0	44.1	44.3	44.0	42.0	42.3	42.3	44.1	44.0	44.0
Instruments and related products	41.5	41.5	41.2	41.4	41.4	41.3	41.4	41.8	41.4	41.3
Miscellaneous manufacturing	39.4	39.1	39.0	39.2	39.4	39.3	39.2	39.4	39.2	39.2
Nondurable goods	40.3	39.9	39.9	40.1	40.2	40.2	40.1	40.3	40.0	40.1
Overtime hours	3.6	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Food and kindred products	40.1	39.5	40.2	40.4	40.1	40.3	40.1	40.1	40.2	40.4
Tobacco manufactures	41.2	38.5	39.4	39.6	(2)	(2)	(2)	(2)	(2)	(2)
Textile mill products	42.4	41.0	40.6	40.9	42.1	41.6	41.2	41.6	40.7	40.6
Apparel and other textile products	37.3	36.8	36.8	37.2	37.0	37.0	37.0	37.4	36.8	36.9
Paper and allied products	43.3	43.0	43.1	43.0	43.4	43.3	43.2	43.3	43.3	43.1
Printing and publishing	37.6	38.0	37.5	37.7	38.0	38.1	38.1	38.2	37.7	38.1
Chemicals and allied products	42.2	42.1	41.9	42.4	42.2	42.4	42.5	42.1	41.9	42.4
Petroleum and coal products	43.6	44.4	43.8	44.3	(2)	(2)	(2)	(2)	(2)	(2)
Rubber and misc. plastics products	41.8	41.8	41.6	41.7	41.7	41.6	41.7	42.0	41.7	41.6
Leather and leather products	39.5	37.0	37.7	37.9	38.5	37.8	37.9	37.3	37.4	36.9
Transportation and public utilities	39.2	39.2	39.0	39.5	39.0	39.1	38.8	39.5	39.2	39.3
Wholesale trade	38.3	38.2	38.0	38.2	38.1	38.2	38.1	38.3	38.0	38.0
Retail trade	29.6	28.9	28.9	29.5	29.2	29.1	29.0	29.2	29.0	29.2
Finance, insurance, and real estate	36.4	36.2	35.7	35.8	(2)	(2)	(2)	(2)	(2)	(2)
Services	32.7	32.6	32.4	32.7	32.5	32.7	32.4	32.7	32.5	32.5

1/ Data relate to production workers in mining and manufacturing; construction workers in construction; and nonsupervisory workers in transportation and public utilities; wholesale and retail trade; finance; insurance, and real estate; and services. These groups account for approximately four-fifths of the total employees on private nonagricultural payrolls.

2/ These series are nct published seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separted with sufficent precision.
p = preliminary.

Table B-3. Average hourly and weekly earnings of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Average hourly earnings				Average weekly earnings			
	June 1987	Apr. 1988	May 1988p/	June 1988p/	June 1987	Apr. 1988	May 1988p/	June 1988p/
Total private	$8.91	$9.23	$9.25	$9.23	$311.85	$320.28	$320.05	$323.05
Seasonally adjusted	8.93	9.23	9.27	9.27	310.57	322.13	321.67	322.60
Mining	12.52	12.60	12.52	12.54	529.60	539.28	527.09	530.44
Construction	12.46	12.88	12.88	12.90	482.35	488.15	493.30	499.23
Manufacturing	9.87	10.12	10.14	10.16	405.66	414.92	414.73	417.58
Durable goods	10.40	10.65	10.67	10.69	433.68	444.11	444.94	447.91
Lumber and wood products	8.43	8.50	8.53	8.57	348.16	345.10	344.61	348.80
Furniture and fixtures	7.66	7.81	7.87	7.89	306.40	305.37	306.93	309.29
Stone, clay, and glass products	10.28	10.41	10.44	10.45	436.90	442.43	446.83	446.22
Primary metal industries	11.91	12.11	12.14	12.14	513.32	526.79	529.30	532.95
Blast furnaces and basic steel products	13.75	13.94	13.96	13.88	596.75	613.36	612.84	625.99
Fabricated metal products	9.98	10.22	10.23	10.25	416.17	426.17	426.59	430.50
Machinery, except electrical	10.64	10.88	10.90	10.93	452.83	463.49	462.16	464.53
Electrical and electronic equipment	9.83	10.09	10.12	10.13	403.03	411.67	411.88	415.33
Transportation equipment	12.87	13.28	13.32	13.38	539.25	569.71	574.09	572.66
Motor vehicles and equipment	13.47	14.09	14.10	14.18	565.74	621.37	624.63	623.92
Instruments and related products	9.66	9.89	9.88	9.91	400.89	410.44	407.06	410.27
Miscellaneous manufacturing	7.75	7.92	7.95	7.96	305.35	309.67	310.05	312.03
Nondurable goods	9.13	9.37	9.37	9.40	367.94	373.86	373.86	376.94
Food and kindred products	8.92	9.14	9.15	9.15	357.69	361.03	367.83	369.66
Tobacco manufactures	15.85	14.98	15.26	15.97	653.02	576.73	601.24	632.41
Textile mill products	7.13	7.35	7.31	7.32	302.31	301.35	296.79	299.39
Apparel and other textile products	5.89	6.04	6.04	6.08	219.70	222.27	222.27	226.18
Paper and allied products	11.42	11.60	11.63	11.60	494.49	498.80	501.25	498.80
Printing and publishing	10.19	10.40	10.43	10.43	383.14	395.20	391.13	393.21
Chemicals and allied products	12.28	12.57	12.57	12.62	518.22	529.20	526.68	535.09
Petroleum and coal products	14.44	15.00	14.90	15.07	629.50	666.00	652.62	667.60
Rubber and misc. plastics products	8.89	9.04	9.05	9.09	371.60	377.87	376.48	379.05
Leather and leather products	6.09	6.29	6.26	6.27	240.56	232.73	236.00	237.63
Transportation and public utilities	11.96	12.27	12.25	12.20	468.05	480.98	477.75	481.90
Wholesale trade	9.34	9.88	9.87	9.85	365.38	377.42	375.06	376.27
Retail trade	6.06	6.26	6.27	6.27	179.97	180.91	181.20	184.97
Finance, insurance, and real estate	8.63	9.03	9.09	8.95	314.13	326.89	324.51	320.41
Services	8.37	8.82	8.84	8.78	273.70	287.53	286.42	287.11

1/ See footnote 1, table B-2.

p = preliminary.

Table B-4. Hourly Earnings Index for production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

(1977=100)

Industry	Not seasonally adjusted					Seasonally adjusted						
	June 1987	Apr. 1988	May 1988p	June 1988p	Percent change from: June 1987-June 1988	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988p	June 1988p	Percent change from: May 1988-June 1988
Total private nonfarm:												
Current dollars	172.6	178.1	178.6	178.1	3.2	172.9	176.7	177.0	178.0	178.6	178.5	-0.1
Constant (1977) dollars	93.5	93.8	93.6	N.A.	(2)	93.8	93.7	93.5	93.6	93.5	N.A.	(3)
Mining	181.9	184.6	184.1	185.0	1.7	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Construction	154.8	157.4	157.7	157.9	2.0	155.4	156.8	157.5	157.8	157.7	158.3	.4
Manufacturing	174.5	178.2	178.5	178.7	2.4	174.5	177.0	177.3	177.9	178.3	178.8	.3
Transportation and public utilities	174.7	180.2	180.0	179.2	2.6	175.6	179.1	179.4	180.6	181.1	180.1	-.5
Wholesale trade	176.3	182.3	182.3	181.6	3.0	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Retail trade	160.4	165.2	165.7	165.7	3.3	160.6	163.4	163.8	164.8	165.4	165.9	.3
Finance,insurance, and real estate	185.4	194.8	196.0	193.6	4.5	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Services	179.3	188.5	189.4	188.3	5.0	180.2	186.3	186.9	188.3	189.8	189.2	-.3

[1] See footnote 1, table B-2

[2] Change is -.5 percent from May 1987 to May 1988, the latest month available.

[3] Change is -.1 percent from April 1988 to May 1988, the latest month available.

[4] These series are not seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separated with sufficient precision.

N.A. Data not available.

p = preliminary.

Table B-5. Indexes of aggregate weekly hours of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

(1977=100)

Industry	Not seasonally adjusted				Seasonally adjusted					
	June 1987	Apr. 1988	May 1988p/	June 1988p/	June 1987	Feb. 1988	Mar. 1988	Apr. 1988	May 1988p/	June 1988p/
Total private	122.5	123.6	124.4	127.2	120.5	123.9	123.6	125.1	124.4	125.3
Goods-producing industries	100.6	100.8	102.4	105.0	98.7	101.1	101.6	102.7	102.1	103.0
Mining	81.1	83.8	83.0	84.5	80.8	82.5	83.2	85.9	83.9	84.4
Construction	140.5	135.4	143.5	151.7	132.7	136.0	139.1	141.1	139.8	143.6
Manufacturing	93.8	94.9	95.3	96.9	93.0	95.2	95.2	96.1	95.7	96.1
Durable goods	91.4	93.4	93.8	95.1	90.4	92.7	92.7	94.0	93.9	94.1
Lumber and wood products	106.3	102.5	103.9	107.3	101.9	103.6	103.1	104.7	105.0	103.0
Furniture and fixtures	110.3	111.9	111.4	112.7	110.8	113.2	112.3	113.2	113.7	113.1
Stone, clay, and glass products	88.8	87.7	89.7	90.3	85.5	87.3	87.5	88.3	87.5	87.7
Primary metal industries	63.9	67.8	68.3	69.3	63.4	66.4	66.9	67.6	68.2	68.8
Blast furnaces and basic steel products	51.1	54.7	54.7	56.2	50.2	53.9	54.1	54.8	54.6	55.9
Fabricated metal products	88.7	91.0	91.7	93.6	88.0	90.8	90.8	91.8	92.1	92.8
Machinery, except electrical	86.1	91.4	91.5	92.4	85.4	90.2	90.4	91.5	91.6	91.7
Electrical and electronic equipment	99.6	101.4	101.2	103.1	99.3	101.8	101.9	102.8	102.2	102.9
Transportation equipment	99.2	100.0	100.6	100.4	98.8	97.3	96.8	100.0	100.3	99.9
Motor vehicles and equipment	88.8	90.3	91.3	91.4	87.4	85.7	84.8	89.8	90.0	90.3
Instruments and related products	103.1	105.8	105.3	106.9	102.0	105.0	105.2	106.5	106.1	106.1
Miscellaneous manufacturing	82.2	84.0	83.4	84.7	81.6	84.8	84.5	85.0	83.9	83.9
Nondurable goods	97.4	97.2	97.6	99.6	96.7	99.0	98.8	99.1	98.4	98.9
Food and kindred products	99.1	95.0	97.5	101.9	99.2	101.7	100.9	101.0	101.0	101.9
Tobacco manufactures	72.4	66.7	66.1	67.6	75.8	75.8	74.8	73.8	70.9	71.0
Textile mill products	83.7	80.9	80.2	80.8	82.7	82.7	81.7	82.2	80.4	79.8
Apparel and other textile products	86.7	85.0	85.1	86.3	85.0	85.5	85.7	86.2	84.8	84.7
Paper and allied products	101.3	100.2	100.5	102.2	100.4	101.5	101.3	101.4	101.4	101.3
Printing and publishing	129.8	136.3	134.3	135.4	130.9	135.5	136.0	136.5	134.7	136.8
Chemicals and allied products	94.1	97.2	97.3	99.7	93.4	97.1	97.9	97.1	97.3	98.8
Petroleum and coal products	85.7	84.0	85.4	87.5	83.9	84.5	83.5	84.9	84.7	85.3
Rubber and misc. plastics products	116.3	122.7	122.8	124.5	115.1	121.0	121.8	122.9	122.9	123.4
Leather and leather products	59.5	54.8	56.5	57.8	56.8	57.2	56.9	55.5	56.1	55.4
Service-producing industries	134.6	136.1	136.6	139.5	132.5	136.4	135.8	137.4	136.7	137.6
Transportation and public utilities	109.9	111.9	112.5	115.4	108.4	111.8	111.2	113.5	113.0	113.9
Wholesale trade	120.2	123.8	124.2	126.2	118.9	123.1	123.6	124.8	124.3	124.9
Retail trade	124.8	123.2	124.8	128.6	122.2	125.2	124.8	126.0	125.1	126.4
Finance, insurance, and real estate	143.5	140.6	139.2	141.6	141.6	141.6	139.6	141.1	139.5	139.8
Services	154.2	158.8	158.9	161.5	152.1	158.0	157.2	159.0	158.4	159.4

1/ See footnote 1, table B-2

p = preliminary.

Table B-6. Indexes of diffusion: Percent of industries in which employment1/ increased

Time span	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span:												
1986	57.0	47.3	49.5	50.8	51.9	46.8	51.9	54.1	51.4	53.0	58.9	58.9
1987	50.8	59.2	61.1	62.4	62.4	61.6	70.8	62.2	68.1	67.3	67.8	68.4
1988	61.6	61.6	62.2	63.8	p/57.6	p/65.4						
Over 3-month span:												
1986	50.0	47.6	45.7	46.2	46.2	46.2	48.1	51.9	50.5	55.9	59.7	59.2
1987	57.6	57.0	65.1	69.2	68.1	71.9	73.8	76.8	74.1	76.5	78.1	73.0
1988	71.6	66.8	67.0	p/67.0	p/67.6							
Over 6-month span:												
1986	48.1	47.3	43.8	42.7	43.2	47.0	46.5	50.0	55.9	53.2	55.9	58.4
1987	64.6	64.3	63.0	70.3	72.4	77.3	78.4	79.7	82.7	77.8	77.0	76.5
1988	73.5	p/70.0	p/68.4									
Over 12-month span:												
1986	42.2	41.6	43.8	44.9	45.7	48.6	46.8	48.6	51.6	53.8	56.5	57.8
1987	63.8	67.3	69.5	73.5	76.8	76.8	78.9	78.9	79.7	78.4	p/78.1	p/80.8
1988												

1/ Number of employees, seasonally adjusted for 1, 3, and 6 month spans, on the payrolls of 185 private nonagricultural industries. Data for the 12-month span are unadjusted.

NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components are counted as rising.) Data are centered within the spans.
p=preliminary.

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BLS REPORT ON EXPERIMENTAL REWEIGHTED PRICE INDEX FOR OLDER PERSONS

The U.S. Labor Department's Bureau of Labor Statistics (BLS) reported to Congress today on an experimental price index reweighted to represent the expenditure experience of Americans 62 and older. The study had been required by the Older Americans Act Amendments of 1987.

In some of the years of the study, the experimental measure rose more than the Bureau's two official consumer price indexes. Over the 5 years covered by the study--December 1982 to December 1987--the experimental index rose 19.5 percent; this compares with increases of 18.2 percent in the CPI for All Urban Consumers (CPI-U) and 16.5 percent in the CPI for Urban Wage Earners and Clerical Workers (CPI-W) over the same period.

Commissioner of Labor Statistics Janet L. Norwood cautioned against use of the experimental index for pension and other adjustments, pointing out that the reweighting carried out in the study was only a first approximation of an index for older Americans. The Bureau said that a Consumer Price Index for Older Americans reliable enough for such use--in place of either the CPI-U or the CPI-W--would require both (1) a larger sample of older American households in the expenditure survey upon which the reweighting was based and (2) new samples of market basket items, stores and prices to represent the things bought by older Americans.

The BLS report advised the Congress that if an improved index were desired, work should begin with a comprehensive reexamination of the medical care component. Older Americans have different illnesses, buy different drugs, have different insurance experience, and frequently see different medical specialists from the younger population.

The Bureau cautioned that care should be taken in analyzing the results of the experimental index since it is subject to considerably larger sampling errors than either of the two official measures.

Further details of the BLS study are in the attached summary of the report to the Congress.

June 30, 1988

Experimental Consumer Price Index for Older Americans
Summary

In accordance with provisions of the Older Americans Act Amendments of 1987, the Department of Labor, through the Bureau of Labor Statistics (BLS), developed "a reweighted index of consumer prices which reflects the expenditures for consumption by older Americans 62 years of age and older." The scope, limitations, and behavior of this experimental index, which are detailed in a BLS report sent today to Congress, are summarized below.

BLS currently publishes CPI's for two population groups: All Urban Consumers (CPI-U) representing the spending habits of 80 percent of the population of the United States; and Urban Wage Earners and Clerical Workers (CPI-W) representing the spending habits of 32 percent of the population.

Construction of the Experimental Index

The Bureau calculated the experimental index for older Americans for the period January 1983 to March 1988. The year 1983 is the beginning date for the experimental index because the change in the treatment of homeowners shelter costs introduced in that year made calculation of the index for earlier periods impractical.

The experimental index merely reweights the price information routinely collected for the official CPI-U and CPI-W indexes using expenditure patterns of consumers age 62 and over to assign relative weights to the various categories of spending. The source of data for the spending patterns of older consumers was the Consumer Expenditure Survey (CE), a survey which is regularly conducted by the Bureau to provide data on how U.S. consumers spend their money and which serves as the basis on which periodic revisions of the official CPI's market baskets are made. The experimental index uses the same methods as those used in calculating the official CPI's, including use of the complete geographic and item sample detail of the official measures.

Limitations of the Experimental Index

The experimental index has important limitations as an estimate of the inflation rate experienced by older Americans.

One major limitation is that the categories of items to be priced are selected using expenditure weights calculated from the Consumer Expenditure surveys for the official index populations. As a result, the specific item groups selected for each expenditure category may not be representative of the experimental index population. Further, the specific items selected for pricing within a store, while appropriate for the official indexes, may not in fact, be equally appropriate for the older population. For example, surgeons selected for the CPI sample supply information on the relative proportions of procedures such as appendectomies, hernia repairs, and cyst excisions that they perform for all of their patients. To the extent that these proportions differ from the proportions of each treatment type performed for older patients, the sample selected for the CPI-U may be an inappropriate reflection of the price experience of older consumers.

In addition, the stores for pricing are selected based on data reported in a survey representing all urban households, the Point-of-Purchase Survey. The outlets may not be representative of the places of purchase of the older population, however. The sample size of the current Point-of-Purchase Survey is not sufficient to determine whether older Americans typically shop in different types of stores or localities from the general population.

A further source of uncertainty about the appropriateness of using CPI-U prices in the index for older consumers concerns the availability of special prices for the older population. For example, senior-citizen discount rates are included in the CPI in proportion to their use by all urban consumers. In constructing a price index for the older population, however, senior-citizen discounts should be included in proportion to their use by that population.

Finally, the expenditure patterns calculated for the experimental index are based upon samples that are considerably smaller than those from which expenditure patterns were calculated for the official indexes. Thus, the experimental index has considerably larger sampling errors than the official measures.

The Reweighted Experimental Index

Over the 5-year period from December 1982 to December 1987, the experimental index rose 19.5 percent. This compares with increases of 18.2 percent for the CPI-U and 16.5 percent for the CPI-W.

All Items percent change for alternative CPI definitions, 12 months ended in December, 1983-1987

	All Urban Consumers	Wage Earners and Clerical Workers	Experimental Index
1983	3.8	3.3	3.7
1984	3.9	3.5	4.1
1985	3.8	3.6	4.1
1986	1.1	0.6	1.8
1987	4.4	4.5	4.5
1982-1987	18.2	16.5	19.5

Examining the indexes in more detail, medical care costs registered the largest increase of the 7 major expenditure groups during the 1982-87 period for each of the three CPI's. The reweighted experimental index rose 37.2 percent, slightly less than the 37.4 percent increase in the CPI-U and the 37.8 percent rise in the CPI-W. The smallest advance in the five-year period among the major groups for all three indexes was the transportation component, which rose 10.5 percent in the experimental index and 9.7 and 9.5 percent in the CPI-U and CPI-W, respectively.

The inflationary experience of the last 5 years differed in many ways from that of the last decade or so, and there is no assurance that the results of this study would have been the same had the study covered the entire period -- or, indeed, whether the results will be similar in the years ahead. Shelter, energy and medical care stood out as significant sources of the inflationary experience of the past five years. Shelter and medical care had a large impact because their relative importances, especially in the experimental index, were so large. Energy was likewise significant because of its extreme volatility of price movement over the period.

Virtually all of the difference between the experimental index and the 2 official measures, during the five-year period, can be explained by the differential effects of the shelter and medical care components. The shelter component accounted for about 40 percent of the difference between the CPI-U and the experimental index. Almost all of the remaining difference was accounted for by the medical care component. The experimental index rose 3 percent more than the CPI-W index. Shelter accounted for one-half of that difference, and much of that stemmed from the difference in treatment of shelter costs in the CPI-W and the experimental index during 1983 and 1984. The medical care component accounted for most of the remaining difference.

Social Security Cost of Living Adjustments (COLA's)

While useful for study, the experimental index, targeted at persons 62 years of age and older, likely does not have the most appropriate population definition for an index to be used in indexing Social Security benefits.

For example, an estimated 25 percent of all Social Security beneficiaries are younger people who receive benefits because they are surviving spouses and/or minor children of covered workers or because of disability. Also, according to data from the Social Security Administration, 42 percent of the population age 62 to 64, although eligible for retirement benefits, were not collecting them during the 1982-84 period. An index designed specifically to measure price change for beneficiaries -- i.e., one that excludes older persons not receiving benefits, but includes younger persons receiving survival and disability benefits -- might well show price movements different from those of this study's experimental index.

Nonetheless, BLS developed simulations of alternative COLA's percentages under Social Security using the CPI-U and the experimental index. Because of the limitations of the reweighted index discussed in the report, however, these simulations should be analyzed with caution.

Adjustments to Social Security benefits currently are based upon the percentage change in the CPI-W (1967=100) measured from the average of the third quarter of one year to the average of the third quarter of the succeeding year. The following table presents simulations based upon the CPI-U and the experimental index as well as the CPI-W.

Alternative COLA's based on the CPI-U and
the Experimental Index, 1984-87

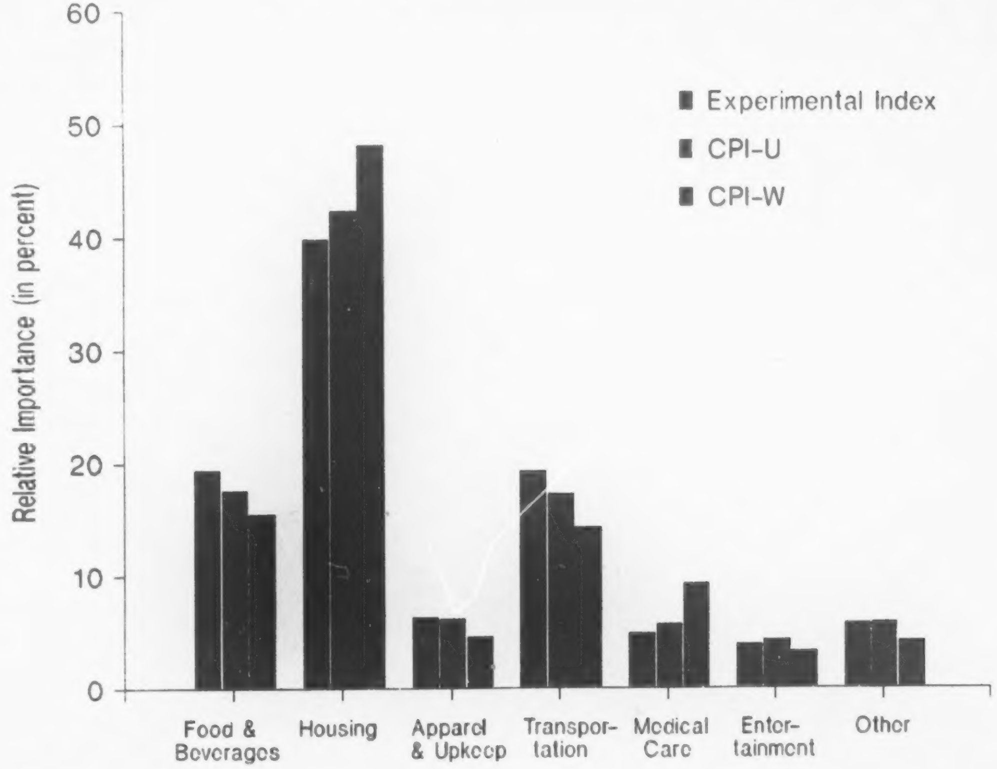
Year	CPI-W	CPI-U	Experimental Index
1984	3.5	4.3	4.3
1985	3.1	3.3	3.7
1986	1.3	1.6	2.3
1987	4.2	4.2	4.3

Although the Social Security COLA based on the CPI-W yielded the lowest adjustment, the range among the indexes does not appear to be very large in view of the limitations of the experimental index. The average annual COLA actually implemented was 3.0 percent. Had the CPI-U been used, Social Security COLA's would have averaged 3.4 percent annually. Use of the experimental index would have yielded annual average increases of 3.7 percent.

Construction of a Consumer Price Index

Current Indexes	Index for Older Americans
* **Population Coverage**	
Eligibility based on planned use CPI-U — economic policy CPI-W — collective bargaining	Older Americans over 62? 65? Retired older Americans? Social Security Pensioners?
* **Geographic Coverage**	
Urban United States 85 areas selected to represent the urban population	Select new areas to represent targeted population, Northeast and small cities gain sample units
* **Expenditure Weights**	
Based on Consumer Expenditure Survey of urban population	Requires expanded survey to represent adequately older population
* **Item Samples**	
Selected items based on CPI population's purchasing patterns	Reflects targeted population purchasing patterns, for example, hip surgery vs day care
* **Outlet Samples**	
Based on Point-of-Purchase Surveys	Requires an increased sample of older Americans equal to sample size of current survey
* **Prices**	
Items selected are priced in 85 areas and 21,000 outlets including special discounts	Requires pricing survey of similar scope, special discounts

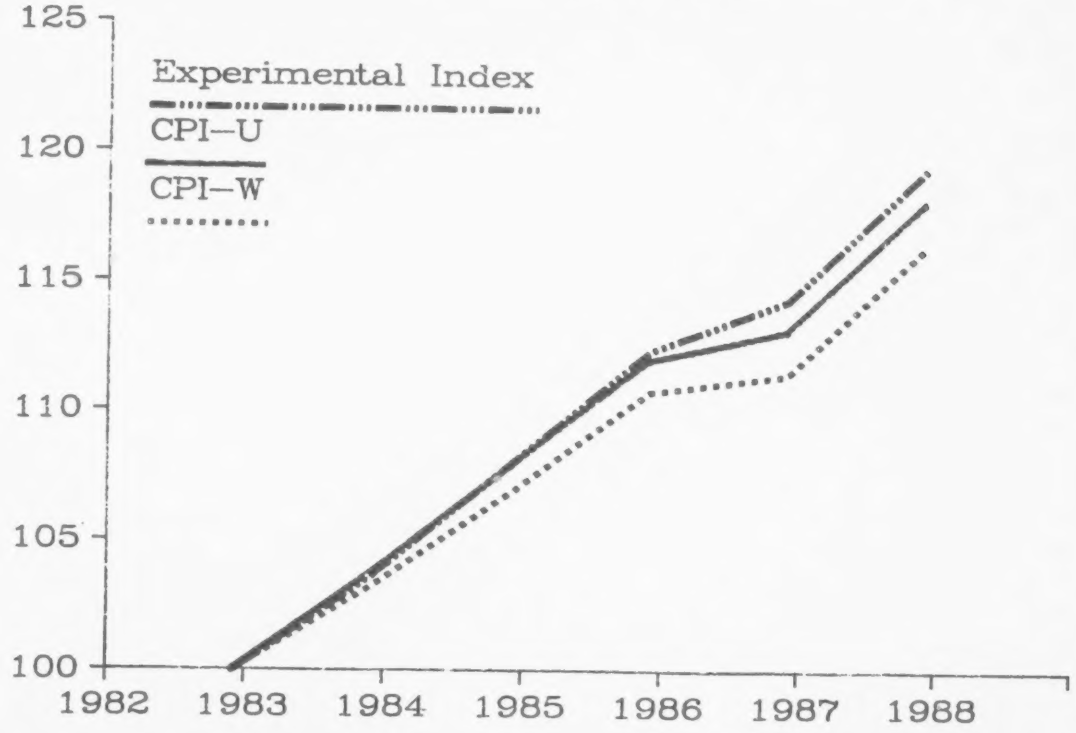
Comparison of Relative Importances, by major group, by population definition, December 1987



Source: Bureau of Labor Statistics

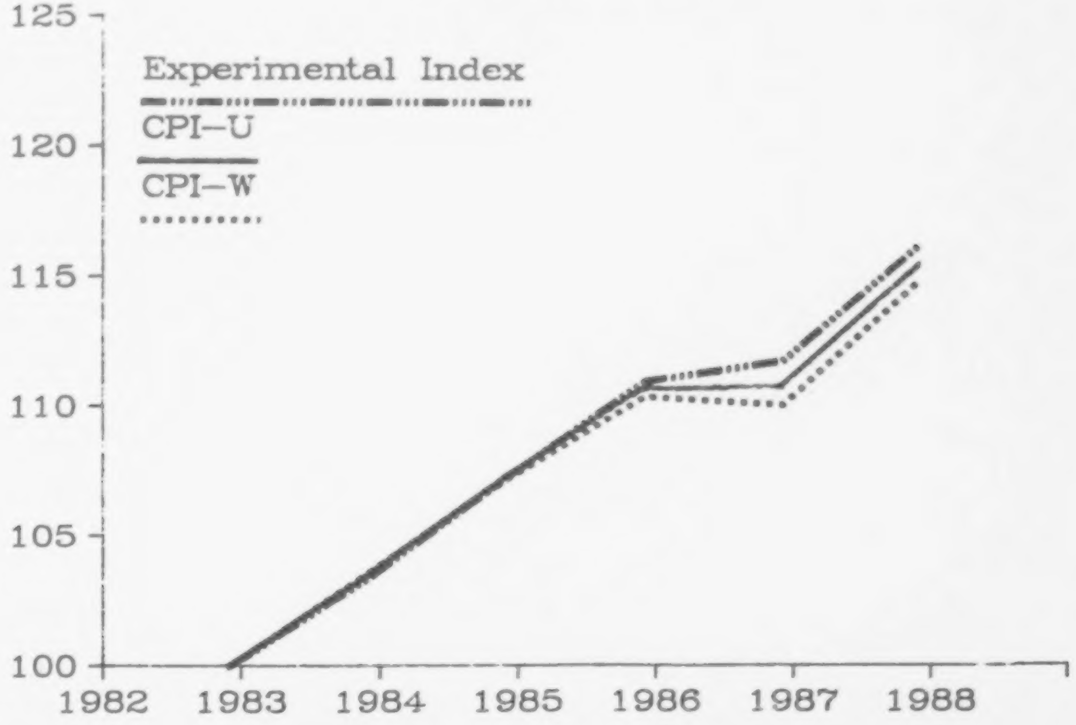
Consumer Price Index, All Items, by population definition, end of year, 1982–1987

(December 1982 = 100)



Source: Bureau of Labor Statistics

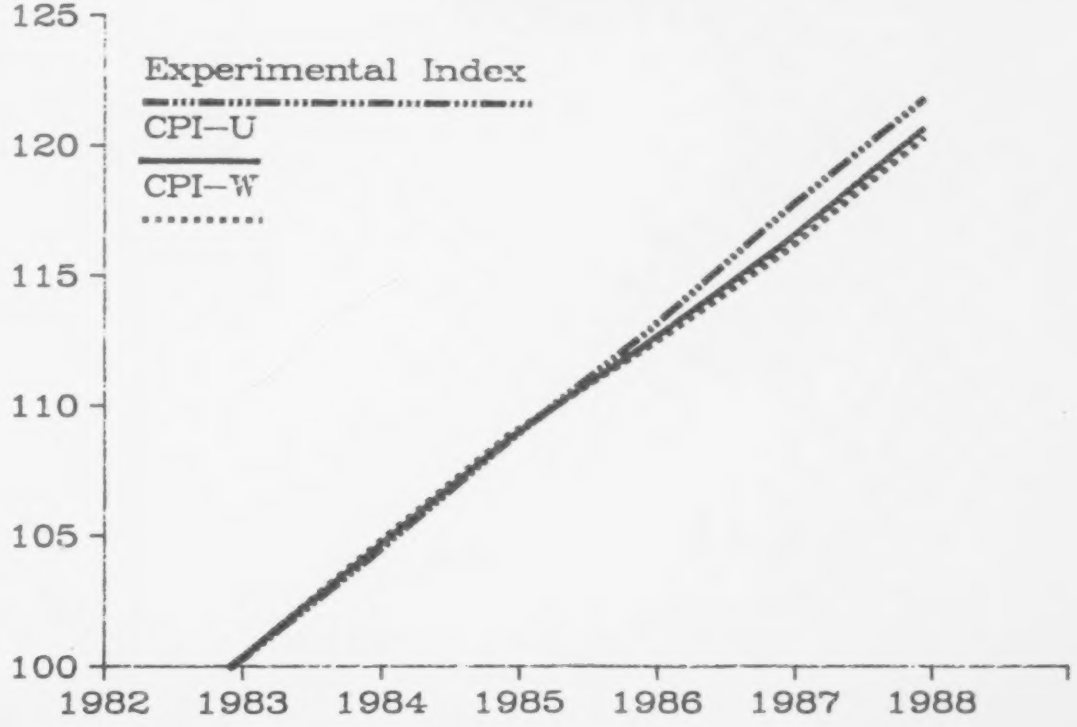
Consumer Price Index, All Items less Shelter,
by population definition, end of year, 1982–1987
(December 1982 = 100)



Source: Bureau of Labor Statistics

Consumer Price Index, All Items less Shelter, and Energy, by population definition, end of year, 1982–1987

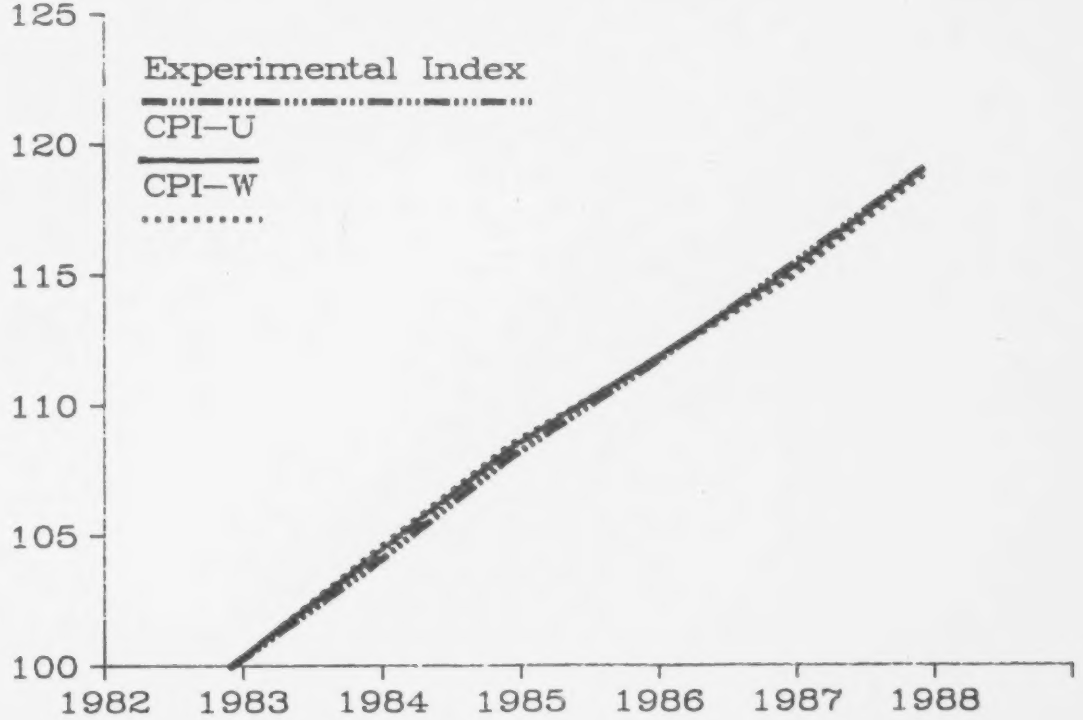
(December 1982 = 100)



Source: Bureau of Labor Statistics

Consumer Price Index, All Items less Shelter, and Energy, and Medical Care, by population definition, end of year, 1982–1987

(December 1982 = 100)



Source: Bureau of Labor Statistics

AN ANALYSIS OF THE RATES OF INFLATION AFFECTING OLDER AMERICANS BASED ON AN EXPERIMENTAL REWEIGHTED CONSUMER PRICE INDEX

Bureau of Labor Statistics
U.S. Department of Labor
June 1988

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The Older Americans Act Amendments of 1987 provided that the Department of Labor, through the Bureau of Labor Statistics, develop "a reweighted index of consumer prices which reflects the expenditures for consumption by older Americans 62 years of age and older." This report describes the construction of an experimental index and discusses issues that need to be addressed in developing a full scale index.

A price index measures the average change in prices over time for a fixed basket of goods and services for a defined population group. BLS currently publishes CPI's for two population groups: All Urban Consumers (CPI-U) representing the spending habits of 80 percent of the population of the United States; and Urban Wage Earners and Clerical Workers (CPI-W) representing the spending habits of 32 percent of the population.

The basic data for the experimental index were taken from the same sources as those underlying the official CPI. However, it must be noted that these sources may not be sufficient, without considerable expansion, to provide the information needed for developing an accurate measure of price change for the population group addressed in the legislation. The reasons are discussed in detail in later sections of this report.

POPULATION COVERAGE

The definition of the total population, age 62 and over, used for the experimental index was all urban noninstitutionalized consumer units which met one of three conditions:

(a) unattached individuals who were at least 62 years of age;

(b) members of families whose reference person (as defined in the Consumer Expenditure Surveys[1]) or spouse was at least 62 years of age; or

(c) members of groups of unrelated individuals living together who pool their resources to meet their living expenses, whose reference person was at least 62 years of age.

Approximately 2,760 consumer units surveyed in the 1972-1973 CE Survey, or about 14 percent of the total sample used in constructing the CPI-U, met this definition. In the 1982-1984 CE Survey, 3,135 full-year equivalent consumer units met the definition, 19 percent of the total sample. The experimental index has roughly half the sample size of the CPI-W. Expenditure weights in the experimental index constructed from this small sample are likely to have a high variance.

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[1] The Consumer Expenditure Survey defines the sampling frame based on Consumer Units. Consumer Units are defined as either: (1) all members of a particular household who are related by blood, marriage, adoption, or other legal arrangements; (2) a person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent; or (3) two or more persons living together who pool their income to make joint expenditure decisions. Financial independence is determined by the three major expense categories: housing, food, and other living expenses. To be considered financially independent, at least two of the three major expense categories have to be provided by the respondent.

Because the CE Surveys collect data about families or other people who pool their income and expenditures, the data used in the experimental index exclude some older consumers' expenditures and include some expenditures of family members who are under 62 years of age. Among the older consumers whose expenditures are excluded from the index are the institutionalized elderly population, estimated at 5.5 percent of the population over age 60, and those Americans age 62 and over who live in a consumer unit where the reference person and the reference spouse are under age 62. For example, older Americans living with their grown children are excluded from the experimental index population. On the other hand, expenditures of children or other related individuals living in consumer units where the reference person or spouse is 62 or over are included. However, the effect of these differences in population coverage is small, since about 82 percent of older Americans are included in the definition used.

Characteristics of the Age 62 and Over Population

In addition to age, some characteristics of the experimental index population differ significantly from those of the population represented by the CPI-U. Homeowners represent about 20 percent more of the experimental index population than in the CPI-U population. In the age 62 and over population individuals living alone account for 40 percent of the consumer units and 23 percent of that group's population, substantially higher than the 29 percent of consumer units and 11 percent of the population in the CPI-U.

In addition, the population age 62 and older is more likely to live in smaller cities in all geographic regions and in those larger cities experiencing lower rates of economic growth in the first half of the 1980's.

Older couples included in the experimental index population have money income that is 82 percent of the average for all CPI-U couples. Older 1-person consumer units, however, have an income level that is only 71 percent of that for 1-person consumer units in the CPI-U population.[2]

The most striking differences, however, are the differences between the 62 to 70 year olds and those consumer units where the reference person is 70 or older (table 1). While each group makes up 50 percent of the consumer units age 62 and over, the younger group is composed of more multi-person consumer units and fewer single person consumer units. Those in the younger group are more likely to own their homes, and are three times more likely to be working than are those age 70 or older.

The average income of the 62 to 70 age group is also significantly higher, both per consumer unit and per capita. The average cash income for all older couples is more than twice that of older individuals living alone.

When the older population is subdivided into those 62 to 70 years old, the differences between their income and that of the general population is much less, with income for couples at 93 percent, and single households at 82 percent of the CPI-U average. For those in consumer units age 70 years and older, however, the income gap between them and the CPI-U populations widens, with this group's income equal to only about two-thirds of average CPI-U income.

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[2] These income figures have not been adjusted to include certain tax preferences enjoyed by older Americans, for example: partial exemption from taxes on Social Security income and substantial exemption from capital gains tax in the sale of primary residences. These income figures also do not include the value of Medicare payments or other noncash income.

Table 1. Characteristics of the Experimental Index Population

	-62 and Older-			
	TOTAL CU's	Mean income	CU's Age 62-70	CU's Age70 and over
Number of Consumer Units (in thousands)	17,166		8,576	8,590
Percent				
Homeowners	73.0	$14,615	78.0	68.1
Renters	27.0	8,080	22.1	31.9
Working	25.9	18,336	39.5	12.2
Not working[3]	15.3	9,465	16.9	13.6
Retired[4]	58.9	11,071	43.5	74.2
One person	40.4	7,041	31.1	49.7
Two or more persons	59.6	16,673	68.9	50.3
Male reference person	55.2	16,260	74.7	35.7
Female reference person	44.8	8,547	25.3	64.3
Mean income	$12,816		$15,645	$9,638

Source: 1982-84 CE Interview Survey

Expenditure Weights

The experimental Consumer Price Index was constructed as a weighted average of price changes at the item stratum level collected from the sample of urban areas used in calculating the official CPI, and weighted according to their importance in the spending patterns of the experimental index population. The weights for the experimental index were derived from the same survey sources (Consumer Expenditure Surveys of 1972-73 and 1982-84) as

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3. Not working is defined as not retired but reporting zero weeks of work. This group includes the unemployed and reference persons who do not qualify as retired such as widows or widowers who never were employed.

4. Retired is defined as zero weeks worked and the principal reason for not working is self reported as "retired".

those for the official CPI. The 1972-73 weights were constructed using the same methodology as that employed for the CPI-U as of January 1983.

The CPI was most recently revised in January 1987 to reflect 1982-84 expenditure patterns. The experimental index also reflects the 1982-84 data, beginning with the index for January 1987. In updating the expenditure weights to the current time period, the CPI-U was used.

In order to determine the weights of the various categories of expenditure needed to construct the experimental index, the expenditures of older consumer units were tabulated from the 1972-73 and 1982-84 CE Surveys. Expenditures by category, when expressed as a proportion of total expenditures, yields the relative importance of each category. (The terms "relative importance" and "weight" are used interchangeably in the following discussion.) Tables 2 and 3 show the relative importances of selected categories of expenditures aggregated from the more detailed levels used in construction of the index. In table 2, the relative importance is expressed in terms of 1972-73 expenditure quantities and December 1982 prices, to correspond to the month prior to the starting point of the experimental index. Table 3 is based on expenditure quantities for the 1982-84 CE survey and December 1986 prices, to correspond to the month prior to the 1987 CPI revision, which introduced the 1982-84 market basket into the official CPI in January 1987.

Table 2. Relative Importance of Selected Major Categories of Expenditures, December 1982[5]

	CPI-U	Experimental Index
All Items	100.00	100.00
Food and Beverages	20.07	18.98
Food at home	12.87	13.29
Food away from home	6.10	4.81
Alcoholic Beverages	1.11	.87
Housing	37.72	43.66
Rent	6.03	6.63
Owners'Equivalent Rent	13.49	17.51
Fuel Oil	1.34	2.09
Electricity	2.59	2.85
Natural Gas	2.07	2.63
Apparel and Upkeep	5.21	4.02
Transportation	21.79	16.47
Motor fuel	6.19	4.65
Medical Care	5.99	9.37
Entertainment	4.21	3.55
Other Goods and Services	5.01	3.95

Table 3. Relative Importance of Selected Major Categories of Expenditures, December 1986

	CPI-U	CPI-W	Experimental Index
All Items	100.00	100.00	100.00
Food and Beverages	17.66	19.45	15.62
Food at home	9.86	11.14	9.88
Food away from home	6.19	6.65	4.60
Alcoholic Beverages	1.55	1.65	1.14
Housing	42.48	39.95	48.47
Rent	6.03	6.87	4.43
Owners' Equivalent Rent	19.26	16.84	25.25
Fuel Oil	.30	.26	.49
Electricity	2.67	2.74	2.99
Natural Gas	1.23	1.29	1.68
Apparel and Upkeep	6.34	6.36	4.66
Transportation	17.45	19.41	14.24
Motor fuel	3.29	4.03	2.35
Medical Care	5.83	4.95	9.38
Entertainment	4.37	4.04	3.36
Other Goods and Services	5.93	5.84	4.27

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[5] CPI-W was not included in Table 2 since the rental equivalency approach to homeownership cost was not introduced until 1985 for the CPI-W and therefore, the CPI-W was not comparable to the CPI-U and the experimental index prior to that date.

The expenditure patterns of the three population groups shown in table 3 differed significantly. Further, expenditure patterns changed between 1972-73 and 1982-84 (tables 2 and 3). The differences in the relative importance of expenditure categories between the population groups and for the same population group over time resulted from differences in preferences, demographic characteristics, levels of income, and even from responses to price change. Some examples of differences between the population groups include: larger family size, with more children, in the younger population; and, in the older population, higher proportions of women and homeowners, different entertainment preferences, and a greater need for medical care.

Housing and medical care costs had considerably higher relative weight in the total expenditures of the older Americans than for the CPI-U or CPI-W populations. In addition, housing and medical care, along with apparel and upkeep, were the only major groups which increased in importance for older Americans between CPI revisions. The increase in medical care, while slight, is of particular interest, since this major group's relative importance declined for both of the other populations as the degree of employer provided health insurance increased.

Within the food and beverage category, the relative expenditures on alcoholic beverages and, especially, food away from home were significantly less for the experimental index. Within the food at home component the older population spent a higher proportion on bakery products, pork, fresh fruits, and fresh vegetables.

Within the housing major group, home rental expenses had less weight, and lodging while out of town more weight for the older population. The importance of expenditures for homeownership as measured by owners' equivalent rent was noticeably higher for the experimental index population, at nearly 26 percent, compared to 19 percent for the CPI-U population, an indication of the higher proportion of homeowners versus renters in the experimental index population. The higher weights for lodging while out of town and for long distance trips indicate that the experimental index population spends a greater percentage of their budget on travel. The older population also spends a higher proportion of their budget on heating oil and electricity than do the younger populations. The household services component of the housing major group also includes care of invalids in the home, which is understandably higher for the experimental index population.

The lower proportion of spending devoted to apparel and upkeep by the older population is almost entirely explained by the small number of children in this population group. The relative importance of expenditures for boys, girls, and infants' clothing is less than one-third that of the CPI-U population. On the other hand, relative importances of expenditures for women's apparel are about the same as that for the CPI-U and CPI-W populations.

Expenditures for every category of private transportation have a lower weight for the older population. Within public transportation, both airfares and other intercity transportation have a higher weight. Only intracity transportation, with its large commuting component, has a lower weight for the older population.

The relative importance for medical care expenditures for the experimental index population is at least one and a half times as large as that for either the CPI-U or the CPI-W population. Differences of this magnitude are found consistently for each item in the medical care category, including health insurance.[6]

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[6] It should be noted that the expenditure weight for the medical care component of the Consumer Price Index is based only on out-of-pocket expenses for consumers. As a result, it includes only that portion of health insurance paid for by consumers (in addition to all directly paid medical care costs). Not included in the expenditure weight is the cost of health insurance borne by employers. Similarly, health care expenditures paid for by the federal government are also excluded. Medicare premiums, deducted from wage and salary income, as a part of Social Security (or FICA)

The two remaining major groups, entertainment and other goods and services, are both characterized by small relative importances for the experimental index when compared with the CPI-U or CPI-W population. Within the entertainment major group, the relative importance of sporting goods and equipment is negligible for the older group. Entertainment services, particularly club membership fees, are also predominantly expenditures of the younger age groups. Within other goods and services, the smaller relative importance of the expenditures for education are offset only slightly by the experimental index's larger relative importance of expenditures for personal care.

Limitations of the Experimental Index

The experimental index has several limitations as an estimate of the inflation rate experienced by older Americans.

One major limitation is that the categories of items to be priced are selected using expenditure weights calculated from the CE surveys for the CPI-U population. As a result, the specific item classes selected for each stratum may not be representative of the experimental index population. Further, in the selection of items for pricing within an outlet, the items with larger market shares have a higher probability of selection than do items with smaller market shares. While the items selected for pricing are appropriate for the CPI-U, there is no certainty that they are equally appropriate for the older population. For example, surgeons selected for the CPI sample supply information on the relative proportions of procedures such

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deductions, are not included as medical care expenditures either. These deductions are a purchase of a claim to future medical care which all wage and salaried individuals are required to make, as a result they are treated as a tax and are excluded from the expenditure weights. Medicare Part B premiums, on the other hand, are paid only by those enrolled in the Medicare program who choose to participate. (Part B covers the cost of physicians' services.) These premiums purchase a claim to current period medical care, and so are considered to be medical care expenditures.

as appendectomies, hernia repairs, and cyst excisions that they perform for all of their patients. To the extent that these proportions differ from the proportions of each treatment type performed for older patients, the sample selected for the CPI-U may be an inappropriate reflection of the price experience of older consumers. Similarly, if the older population purchases certain brands or sizes of products that differ from the brands or sizes purchased by the general population, and if those brands or sizes have different price movements, the experimental index would be misstating the true price movements experienced by the older population. One way to obtain this detail about the variety of items and services purchased by older Americans is to ask the individual consumers themselves. Since the existing consumption surveys do not collect data with this degree of detail, a major survey redesign and expansion would be required.

In addition, the outlets for pricing are selected based on data reported in a survey representing all urban households, the Point-of-Purchase Survey. The outlets may not be representative of the places of purchase of the older population, however. The sample size of the current Point-of-Purchase Survey is not sufficient to determine whether older Americans typically shop in different types of stores or localities from the general population.

A final source of uncertainty about the appropriateness of using CPI-U prices in the index for older consumers concerns the availability of discount prices for the older population. For example, senior-citizen discount rates are used in the CPI in proportion to their use by all consumers. However, in constructing a CPI for the older population, senior-citizen discounts should be included in proportion to their use. To the extent that senior-citizen discounts generally take the form of a percentage discount from the regular price, this may not be a problem. But, if the discount is not a fixed percentage of the price, the current method introduces an error in the experimental index. When the discounts are only available during certain time periods, or on certain products, the within outlet sampling process would need to be enhanced so that the discount price is sampled in the same proportion that it represents of total purchases by the older population.

OTHER STUDIES ON PRICE INDEXES FOR THE OLDER POPULATION GROUP

Several individuals and organizations have conducted research on the differences in price change between the elderly and the population as a whole. As in the current study, all of these start with the assumption that, because the elderly have expenditure patterns different from the rest of the population, the inflation rates experienced by this group may be different. They then examine whether or not the differences persist over time.

Statistics Canada's Findings

In the most comprehensive study and the one most nearly comparable to the BLS study described in this report, Statistics Canada[7] has developed a consumer price index for the Canadian low-income senior-citizen population. Statistics Canada chose this group of senior citizens rather than senior citizens as a whole because even though the former group is declining in Canada while the latter group is increasing, the primary aim of the study was to demonstrate to what extent a low-income senior-citizens CPI would be similar to both the "official" Canadian CPI and a special index produced by Statistics Canada, the low-income CPI. In Canada, the "official" CPI is used to adjust Old Age Security payments, Guaranteed Income Supplements benefits, and other benefits under the Canada/Quebec Pension Plan. As in the United States, the use of the "official" CPI has been questioned by those who argue that since the expenditure patterns are different, the inflation rates must likewise be different.

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[7] K. Hannett and H. Scobie, "A CPI for Low-Income Senior-Citizens", Supplement to the January-March 1986 issue of Consumer Prices and Price Indexes, April 1986, P.5.

Statistics Canada found, however, that even in a period when prices for shelter, which along with food comprise the two largest components of the low-income senior-citizen index, rose faster than all other items, the low-income senior-citizen index was lower than the "official" CPI. In their 1986 report, they stated that "(T)he reason why these particular conditions do not necessarily result in a higher index for a special group is because there are a large number of price and weight relationships in effect at any given time, and they usually tend to be offsetting. The reason they tend to be offsetting is because it is not likely that price increases would be consistently larger for the most important purchases by one group in the CPI population while at the same time they are consistently and substantially smaller for the most important purchases by the remainder of the CPI population."[8]

The results of their study, shown in Table 4, demonstrate that the movement of the low-income senior-citizen CPI was very similar to that of the "official" CPI; over the 1982-85 period, the low-income senior-citizen CPI was only 0.4 percent below the "official" CPI. Statistics Canada concluded that "the use of the 'Official' CPI as a measure of price-induced changes in the purchasing power of low-income senior-citizens is appropriate."

Table 4. Comparison of Canadian Consumer Price Index, for low-income senior-citizens and official CPI between March 1982 and December 1985, for ALL ITEMS (March 1982 = 100)

	Low-income senior-citizens CPI	Official CPI
March 1982	100.0	100.0
December 1982	105.1	105.9
December 1983	110.1	110.7
December 1984	114.5	114.9
December 1985	119.4	119.9

Source: Statistics Canada

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[8] Ibid., p . 19.

United States' Research

No other research has been as comprehensive as that done by Statistics Canada. The results of some of the other research are summarized below:

Thomas Borzilleri[9] used summary level data from the 1972-73 Consumer Expenditure Survey in constructing his "older persons price index (OPI)." He derived indexes for the older population and the total population based on 15 categories of expenditures. During the time period studied, the OPI rose about 4 percent faster than his all persons index. The significance of this result would be greater had the analysis been performed at a more disaggregated level of detail.

Robert Michael[10] based his analysis on data from the 1960-61 Consumer Expenditure Survey. His analysis covered 1967 through June 1974. He examined the index differences both across age groups and within age groups. Like Borzilleri, he found differences in the rate of inflation experienced by different age groups. However, he also found the observed differences in inflation rates between the age groups were small relative to the differences within the age groups.

Robert Hagemann[11] updated the earlier work of Michael. Hagemann made use of 1972-73 Consumer Expenditure data, and his results indicated that during the time period of the analysis, older Americans experienced a slightly higher rate of inflation than did the population as a whole (one-tenth of 1 percent more per year). However, within the older population, different subgroups experienced higher or lower rates and, overall, the variance within the age group was greater than the variance across the age groups.

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[9] Thomas C. Borzilleri, "The Need for a Separate Consumer Price Index for Older Persons: A Review and New Evidence, The Gerontologist, June 1978.

[10] Robert T. Michael, "Variations Across Households in the Rate of Inflation", Journal of Money, Credit and Banking, February, 1979.

[11] Robert P. Hagemann, "The Variability of Inflation Rates Across Household Types," Journal of Money, Banking and Credit, November, 1982, Part 1.

In another study, Mary Kokoski[12] examined price changes for households by demographic characteristics representative of the urban population, including retired consumer units who were also renters. She found that a consumer price index constructed for those households would also have movements very similar to the official CPI-U.

Finally, the General Accounting Office[13] constructed several versions of a CPI for retirees and compared changes in them to changes in the official CPI. During the period examined, from the first quarter of 1978 through the first quarter of 1981, inflation as measured by the special retiree indexes did not differ significantly from inflation as measured by the official CPI. Lawrence Thompson, Chief Economist for the General Accounting Office, summarized their findings in testimony before the United States Senate Special Committee on Aging, and concluded that "such an index should not be used for purposes other than monitoring unless and until further developmental work has been undertaken."[14]

THE REWEIGHTED EXPERIMENTAL INDEX: WHAT DOES IT SHOW?

The experimental index was calculated for the period December 1982 through March 1988. The year 1983 was selected as the starting point for the index because the major change in the treatment of homeownership costs introduced in the CPI-U in that year made calculation of

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12. Mary Kokoski, "Consumer Price Indices by Demographic Group", BLS Working Papers #167, April, 1987.
13. Charles Bowsher, "A CPI for Retirees Is Not Needed Now but Could Be in the Future", (GAO-GGD-82-41, June 1, 1982).
14. Lawrence Thompson, "Developing a Consumer Price Index for the Elderly", (GAO-T-GGD-87-22, June 29, 1987) p. 5.

indexes for earlier periods impractical. Over the 5-year period from December 1982 to December 1987, the experimental index rose 19.5 percent. This compares with increases of 18.2 percent for the CPI-U and 16.5 percent for the CPI-W.

Table 5. All Items percent change for alternative CPI definitions, 12 months ended in December, 1983-1987

	All Urban Consumers	Wage Earners and Clerical Workers	Experimental Index
1983	3.8	3.3	3.7
1984	3.9	3.5	4.1
1985	3.8	3.6	4.1
1986	1.1	0.6	1.8
1987	4.4	4.5	4.5
1982-1987	18.2	16.5	19.5

Examining the indexes in more detail, medical care costs registered the largest increase of the 7 major expenditure groups during the 1982-87 period for each of the three CPI's. The reweighted experimental index rose 37.2 percent, slightly less than the 37.4 percent increase in the CPI-U and the 37.8 percent rise in the CPI-W. The smallest advance in the five-year period among the major groups for all three indexes was the transportation component, which rose 10.5 percent in the experimental index and 9.7 and 9.5 percent in the CPI-U and CPI-W, respectively.

These differences occurred because the expenditure weights of the items that comprised the major groups varied among the three index populations. The expenditure weight that an item had in a particular population's index reflected the importance of that item as a proportion of total expenditures.[15] For example, within the

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15. The expenditure weights are the product of estimates of mean expenditures per consumer unit meeting the index population definition, derived from the CE Surveys, and estimates of the number of consumer units comprising the index population. The weights are calculated at the item stratum level for each geographic market basket area priced in the CPI. Additional detail on the estimation process is contained in "Chapter 19, The Consumer Price Index", *Handbook of Methods, Bureau of Labor Statistics, 1988.*

transportation category the older population devoted a smaller share of spending to gasoline, automobile maintenance and repair, and auto insurance than did the general population. On the other hand, the older population spent a larger share on airline travel and intercity bus and train travel than did the general population.

Within the medical care component, the experimental index population devoted a smaller share of direct, out-of-pocket spending to hospital and related services than did the CPI-W population. The experimental index population, however, spent more of its medical care budget on prescription drugs and health insurance premiums than did the general population.

The food and beverage component of the experimental index (at 18.2 percent) rose more than the CPI-U's 17.6 percent and the CPI-W's 17.2 percent. Housing rose by the same amount in the CPI-U and the experimental index -- 18.7 percent -- whereas the CPI-W registered an increase of only 16.0 percent over the 5-year period.[16]

Similar to the relationship among the 3 indexes in other categories, the apparel and upkeep component of the CPI-U and the experimental index rose by close to the same amount -- 14.2 percent for the CPI-U and 14.3 percent for the experimental index; the CPI-W rose somewhat less -- 14.0 percent.

Entertainment rose more in the experimental index than in the two official indexes, but again, the increase in the CPI-U was closer to that of the experimental index. Other goods and services, however, rose considerably less in the experimental index than in the official indexes -- 31.4 percent, compared to 36.2 for the CPI-U, and 35.5 for the CPI-W, probably because of the higher relative importance of the fast-rising cost of college tuition in the official indexes.

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[16] During 1983 and 1984 the CPI-U shelter index, based on the flow-of-services approach to homeownership, rose more rapidly than the CPI-W index based on an asset approach to homeownership costs, as rents and homeowners' equivalent rents experienced higher rates of price change than did home prices and contract mortgage interest rates which are the major components of the asset approach to homeownership. Had the CPI-W utilized the flow-of-services approach to homeownership costs as early as 1983, the CPI-W housing index would have experienced price movement closer to that of the CPI-U.

As indicated in this report, only the relative importance of the item stratum differed among the three indexes. The price movement of the item stratum indexes was based on prices collected for the CPI-U and CPI-W. But, the older population most likely purchased different types of items, and may have patronized different stores and other outlets when making purchases. They may also have had the advantage of special senior citizen's discounts (for example, for public transportation and entertainment). An index that takes account of these differences may show different trends.

Nevertheless, one thing is clear from this study: the experimental index, reweighted to incorporate the experience of older consumers, behaved more like the CPI-U than the CPI-W. This was not unexpected, of course, since the CPI-U includes the expenditure experience of all urban consumers, including those 62 years of age and over. The CPI-W, on the other hand, is limited to the expenditure experience of wage-earner and clerical-worker families and, therefore, specifically excludes the experience of families whose primary source of income is from retirement pensions. As a result, the relative importances of the items in the experimental index were closer to those of the CPI-U than the CPI-W. For example, in 1986 shelter represented 29.6 percent of the experimental index, 25.3 percent of the CPI-U and only 23.7 percent of the CPI-W; food at home comprised 9.9 percent of the both the CPI-U and the experimental index, but 11 percent of the CPI-W; and even in medical care the CPI-U's relative importance, while less than that of the experimental index's, was significantly higher than the CPI-W's.

Shelter, Energy and Medical Care

The inflationary experience of the last 5 years differed in many ways from that of the last decade or so, and there is no assurance that the results of this study would have been the same had the study covered the entire period -- or, indeed, whether the results will be similar in the years ahead. Shelter[17], energy and medical care stood out as significant sources of the inflationary experience of the past five years. Shelter and medical care had a big impact because their relative importances, especially in the experimental index, were so large. Energy was likewise significant because of its extreme volatility of price movement over the period. When these three components are factored out of the CPI's, there is virtually no difference among the indexes.

Shelter accounted for nearly half of the difference observed among the three indexes. Shelter had about 15 percent more weight in the experimental index than in the CPI-U, and about 25 percent more than the CPI-W. During the 1982-88 time period shelter prices rose about nine percent more than all other items. Its effect can be seen in a comparison between tables 5 and 6. Table 6 shows the annual percent change for all items less shelter. From 1982 to 1987, the experimental index, the CPI-U and the CPI-W rose 16.3, 15.5, and 14.9 percent, respectively. As shown in the table, a substantial part of the difference between the 3 indexes ocurred in 1986.

Since 1968, shelter as estimated by rent has increased 122 percent, while all other items increased 162 percent. In the 15 years between 1968 and 1983, the rent index rose less than the index for all other items in 8 years. During the period that the experimental index was constructed, however, shelter rose at a slightly faster rate in all of the years except 1987. This suggests that a part of the difference observed among the three populations could be explained as a function of the time period selected for the analysis. Any different set of five years would have shown shelter having a substantially smaller effect on the differences among the three CPI's.

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[17] Shelter expenditures are composed of expenditures for rent, homeowners' equivalent rent, tenants and homeowners insurance, and maintenance and repairs. It differs from housing in that it does not include household furnishings and operations or fuel and other utilities.

Table 6. All Items less shelter, percent change for alternative CPI definitions, 12 months ended in December, 1983-1987

	All Urban Consumers	Wage Earners and Clerical Workers	Experimental Index
1983	3.5	3.6	3.4
1984	3.7	3.5	3.8
1985	3.2	3.0	3.4
1986	0.1	-0.3	0.7
1987	4.2	4.4	4.0
1982-1987	15.5	14.9	16.3

Energy items, particularly fuel oil and motor fuels, experienced substantial deflation during the period 1982 through August 1986. Thus, the annual rates of price change were higher in the all items indexes excluding shelter and energy than for all items indexes excluding shelter for all three populations. However, as can be seen by comparing table 7 with the previous table, the differences among the rates of price change in the indexes for the three population groups was affected only slightly by the rate of change in energy prices.

Table 7. All Items less shelter and energy, percent change for alternative CPI definitions, 12 months ended in December, 1983-1987

	All Urban Consumers	Wage Earners and Clerical Workers	Experimental Index
1983	4.3	4.5	4.2
1984	4.2	4.2	4.3
1985	3.4	3.1	3.9
1986	3.5	3.3	4.2
1987	3.8	3.8	3.7
1982-1987	20.7	20.4	21.9

During the five years of the experimental index, the medical care index rose about twice as fast as the All Items Index.[18] The larger than average price increase, coupled with the significantly larger relative importance of medical care in the experimental index, resulted in this component having a greater effect on that index than on the two official indexes. When medical care is factored out of the all items less shelter and energy index (see table 8), the difference between the experimental index and either of the two official CPI's nearly disappears, with the CPI-U still slightly closer to the experimental index than is the CPI-W.

Table 8. All Items less shelter, energy, and medical care, percent change for alternative CPI definitions, 12 months ended in December, 1983-1987

	All Urban Consumers	Wage Earners and Clerical Workers	Experimental Index
1983	4.1	4.3	3.8
1984	4.0	4.0	4.0
1985	3.0	2.9	3.2
1986	3.0	2.9	3.4
1987	3.6	3.6	3.4
1982-1987	19.1	18.9	19.2

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[18] In the late 1970's and early 1980's medical care costs rose about 20 percent faster than all items.

Thus, virtually all of the difference between the experimental index and the 2 official measures (during the 5-year period) can be explained by the differential effects of the shelter and medical care components. The shelter component accounted for about 40 percent of the difference between the CPI-U and the experimental index. Almost all of the remaining difference was accounted for by the medical component. The experimental index rose 3 percent more than the CPI-W index. Shelter accounted for one-half of that difference, and much of that stemmed from the difference in treatment of shelter costs in the CPI-W and the experimental index during 1983 and 1984. The medical care component accounted for most of the remaining difference. Thus, the medical care component was responsible for a large part of the differences between the experimental index and each of the official indexes, the CPI-U and CPI-W. This suggests that the most fruitful area of further research on a CPI for older Americans lies in examining the medical care expenditures of this population.

It is important to note that the foregoing analysis of the behavior of the experimental index does not attempt to evaluate the statistical significance of the differences observed among the three measures. For example, the fact that samples from which expenditure weights for the experimental index were calculated are substantially smaller than those used in either the CPI-U or CPI-W, means that the experimental index is subject to much larger sampling errors than either of the official indexes. This in turn increases the uncertainty of statements concerning the significance of observed differences among the indexes.

Use of CPI for Social Security Cost of Living Adjustments

The Senate Special Committee on Aging specified the population to be covered for this reweighting study: persons 62 years of age and older. While useful for study, this is not likely to be the most appropriate population definition, if the goal were to develop an index for use in indexing Social Security benefits.

The first point that needs to be considered is that many persons receiving Social Security benefits are younger than 62 years of age. An estimated 6.7 million beneficiaries,[19] or about 25 percent of all Social Security beneficiaries, are younger people who receive benefits because they are surviving spouses and/or minor children of covered workers or because of disability. The expenditure experience of this group is not included in the weights for the experimental index for older Americans.

Further, a substantial number of persons 62 years of age and older do not receive Social Security benefits. According to data from the Social Security Administration, 42 percent of the population age 62 to 64, although eligible for retirement benefits, were not collecting them during the 1982-84 period.[20] This percentage drops sharply for those 65 years of age and over -- to 7 percent.[21] (These percentages showed relatively little change during the decade.) Although these older consumers are included in the population covered by the experimental reweighted index, they presumably should be excluded from an index designed to reflect the experience of Social Security pensioners.

An index designed specifically to measure price change for beneficiaries -- i.e., one that excludes older persons not receiving benefits, but includes younger persons receiving survival and disability benefits -- might well show price movements different from those of this study's experimental index. Nonetheless, BLS has developed simulations of alternative COLA's percentages under Social Security using the CPI-U and the experimental index.

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[19] Table 123. "Number and average primary insurance and monthly benefit amounts, by selected family groups, at end of 1986". Social Security Bulletin Annual Statistical Supplement, 1987.

[20] Table 42. "Workers aged 62 or older eligible for retired-worker benefits: Estimated number and percent with benefits in current-pay status, by age and sex, 1956-87". Social Security Bulletin Annual Statistical Supplement, 1987.

[21] Ibid.

Because of the limitations of the reweighted index discussed in this report, however, these simulations should be analyzed with caution.

In addition, of course, it should be remembered that the period covered by this study, from 1983 to the present, has been a period of comparatively low inflation. The rates, shown in table 9, are in marked contrast to those from the late 1970's when double-digit rates of inflation were experienced.

Table 9. Annual Rates of Inflation, December to December, 1978-87, CPI-U

Year	12 Month Percent Change
1978	9.0
1979	13.3
1980	12.5
1981	8.9
1982	3.8
1983	3.8
1984	3.9
1985	3.8
1986	1.1
1987	4.4

As a result of this moderation, recent annual cost-of-living adjustments (COLA's) to Social Security benefit payments have been smaller than in prior years.

Adjustments to Social Security benefits currently are based upon the percentage change in the CPI-W (1967=100) measured from the average of the third quarter of one year to the average of the third quarter of the succeeding year. The following table presents simulations based upon the CPI-U and the experimental index as well as the CPI-W. (A COLA factor for 1983 has not been calculated because the experimental index is not available for the third quarter of 1982).

Table 10. Alternative COLA's based on the CPI-U and the Experimental Index, 1984-87

Year	CPI-W	CPI-U	Experimental Index
1984	3.5	4.3	4.3
1985	3.1	3.3	3.7
1986	1.3 [22]	1.6	2.3
1987	4.2	4.2	4.3

Although the official Social Security COLA based on the CPI-W yielded the lowest adjustment, the range among the indexes is not very large. The average annual COLA was 3.0 percent. Had the CPI-U been used, Social Security COLA's would have averaged 3.4 percent annually. Use of the experimental index -- with all its shortcomings -- would have yielded annual average increases of 3.7 percent.

RESEARCH NEEDS TO ADDRESS ISSUES

In identifying the research components needed in developing a price index for the older population, BLS has made several assumptions which would substantially affect the potential cost of both research and ongoing data collection. The first assumption is that a full-scale CPI for the older population should be of the same reliability as the current Urban Wage Earners and Clerical Workers Index which is used as the escalator for Social Security payments. Secondly, BLS assumes that the definition of the older population includes all persons 62 and over residing in urban and rural nonfarm areas, and that all categories of expenditures will need to be addressed.[23]

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[22] Under existing law, cost of living adjustments were to be made only when the annual change in the CPI-W was at least 3 percent. However, in 1986 Congress authorized a COLA based on the 1.3 percent increase in the benefit adjustment formula.

[23] The definition would determine the data source, or sampling frame. The current definition of all persons age 62 and over would require using either the 1980 Census files maintained by the Census Bureau or a large area sampling

Sample Sizes

Sample sizes would need to be determined for the three major surveys required to develop and maintain an index; namely, the Consumer Expenditure Survey, the Point-of-Purchase Survey, and the pricing survey. In addition, the definition of the population to be covered determines the level of effort needed to locate eligible units. To achieve reliability for an index for a subpopulation equal to that of the total population, it is a statistical necessity that the number of sample units interviewed for the subpopulation be equal to the number of sample units interviewed for the total population.

As an example, BLS prices about 100,000 items each month for the current indexes. Thus, for the older population index, BLS would need to develop surveys of sufficient size to potentially support monthly pricing of another 100,000 items related specifically to the older population.

Data Collection Methodologies

Conceptually, the solution to developing a CPI for older Americans requires the development of a series of household surveys for the older population which obtains detailed descriptions of items purchased by the older Americans and the identification of the outlets where they were purchased.

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approach such as that currently used by BLS for the CPI housing component. Since the older population is a relatively small proportion of the total population, significant oversampling would be necessary. The need for oversampling is a primary determinant of cost using this approach.

If an alternative definition of population were chosen, such as age 62 and over and retired, or recipients of Social Security payments only, alternative sampling frames such as the Social Security Master Beneficiary file would be a better source. Such frames would substantially reduce or eliminate the need for oversampling.

With this kind of information, the following issues could be addressed:

a. whether the nature of their purchases is different from the purchases of the general population;
b. whether the types of outlets frequented by older consumers are different;
c. whether the locations of outlets frequented are different;
d. whether the respondent is able to provide BLS with this kind of information, and
e. whether the information collected is sufficient to identify a specific item/outlet for the measurement of price change.

Further, evaluation criteria would need to be established to judge the reliability of the results of all tests.

To develop the questionnaires needed for data collection for the older population, BLS would use "cognitive" techniques in a laboratory setting for testing questionnaire design. This would address the problems of recall, understanding, and respondent burden that need to be overcome in order to provide the level of detail needed.

Once the questionnaires and procedures were refined, large scale field tests would be planned and carried out for both the older American population and, as a control group, the general population. A detailed description of the research requirements and possible research plan is provided in the appendix.

Given the potential level of resources and the uncertainties surrounding the need for specially selected samples, initial work on a CPI for older consumers should focus on research efforts. The purpose of the research would be to determine (1) whether the specific items purchased and outlets frequented by older consumers are sufficiently different from those of the population underlying the CPI-U that they will impact the measurement process of the older population's CPI in the long run, and (2) whether a methodology for identifying specific items and outlets for the older population can be developed. Even though the research described would require several years to complete, it could be structured so that incremental improvements could be made to the experimental index as the research is funded and results are obtained. In the near term, an estimate of the rate of price change affecting this segment of the population would be available and would provide a basis for comparing the rates of inflation of the older Americans with the rates obtained from the CPI-U and the CPI-W.

Based on the analysis of the 1983-1988 experimental index for older Americans, the initial research effort should focus on the medical care component of the CPI. This component has a substantially larger relative importance in the experimental index than in the CPI-U or CPI-W, and this component has shown significantly higher than average price increases over the past twenty years. A failure to measure accurately price behavior of these services and commodities consumed by the older population would have a detrimental affect on the quality of the price index for the older population. The research would focus on selecting care providers and medical care items for pricing based on the experiences of older consumers.

After an improved sample has been implemented for the medical care component of the experimental index, other incremental improvements which address the limitations of the experimental index could be introduced. These would include the measurement of senior citizen price discounts to reflect their usage by older consumers, and enhancements in the surveys used to develop item and outlet samples.

A phased series of improvements to the experimental index may result in the process requiring a longer period of time. However, the interim indexes produced for the older population group would provide a more useful measure of the difference between the rate of price change between this group and the general population.

APPENDIX

The following outlines a research plan which addresses the issues that the Bureau of Labor Statistics (BLS) feels need to be considered in development of a reliable index for older Americans. It is clear that the research described is both costly and time consuming and has been laid out in accordance with the directive of Congress that BLS specify the steps needed to produce an accurate Consumer Price Index (CPI) for the elderly population.

After evaluating the performance of the experimental index for older Americans over the 1983-88 period, BLS suggests examination of those areas of consumer spending that account for the observed difference between the experimental measure and the official indexes. In this context, BLS would first suggest that efforts be focused on examining in detail the spending on medical care by the population age 62 and over. This suggestion is made because price changes for medical care are clearly one of the major factors that led to differences in behavior between the experimental index for older Americans and the official indexes. While detailed time and cost estimates would need to be developed if this course were to be pursued, it is now estimated that the resources required to support this effort would range from 1 to 2 million dollars per year on average for several years. After the research is completed, production of an index on a regular basis would entail substantial costs.

FIELD TEST DESIGNS FOR OLDER CONSUMER EXPENDITURE SURVEYS AND PRICING QUESTIONNAIRE

1. MEDICAL CARE EXPENDITURE TEST

A. Questionnaire

The questionnaire would be designed for a personal interview with a 3-month recall of medical expenditures. In addition, respondent would be asked to fill in a diary for a 1-month period, with interim visits by the interviewer. The interview questionnaire would develop a 3-month history of medical expenditures, types of illnesses, and descriptions and location of medical facilities used in the 3-month period. The 1-month diary would provide more detail on the smaller expenditures and test the feasibility of using the diary to collect all the information.

B. Hypotheses and Survey Design

The hypotheses are that recall is too difficult a method for obtaining item detail and that the diary format can provide sufficient information for item and outlet medical expenditures.

The test would be composed of several panels. One would be a control panel for all persons under the age of 62 and would be treated in the same way as the panels for age 62 and over. The second panel would be for persons 62 and over; the test would make use of both personal interview and diary formats. The third panel would be for persons 62 and over but would make use of the Diary format only.

One of the design criteria must be that the sample in a given area be of sufficient size to make it possible to identify the number of outlets needed for the pricing questionnaire.

The test would take one year to collect. Each panel would be comprised of the following samples:

1). Control panels: a> One with diary only
(800 usable interviews)
b> One with diary and personal interviews with 3-month recall
(800 usable interviews)

2). Research panels: a> One with diary only
(800 usable interviews)
b> One with diary and personal interview
(800 usable interviews)

Because of the need to screen a large number of cases in order to find the older population, about 12,000 cases would be needed, of which 7,400 would be screened and discarded and the remainder divided between the two control panels and the two test panels. The test would be conducted in about four sample areas such that 200 designated cases for the older population are defined per sample replicate type. This is needed to insure response levels of outlets per sample area similar to the response levels the current questionnaire obtains from the Point-of-Purchase Survey. The sample in the larger areas would be twice the size of the sample in the smaller areas.

2. APPAREL EXPENDITURE TEST

A. Questionnaire

The questionnaire would be in the Diary format and would obtain the detailed information on what was purchased as well as where and for whom it was purchased.

B. Hypotheses and Survey Design

One hypothesis is that the current methodology of recalling levels of expenditure for apparel items for the previous 3-months is not feasible when specific descriptions of the items bought are to be recalled. The second hypothesis is concurrent reporting of purchases and recording of the item descriptions in a diary format is more efficient.

The diary for the apparel test would take 6-months to complete with four visits by the interviewer to assure completeness and continued cooperation. The test would include use of additional visits and phone calls to measure effects of more frequent contact.

The test would be composed of two panels:

1). The control panel receiving the diary (1,200 usable interview)
2). The research panel for those age 62 and over (1,200 usable interviews)

Because of the need to screen the large number of units to locate the population 62 and over, 8,800 housing units need to be screened. The test would be conducted in four sample areas.

3. FOOD AND PERSONAL CARE TEST

A. Questionnaire

Three questionnaires to collect different components of food, food away from home, and personal care would be developed. The reference period would be expanded to 1-month versus the current 2 weeks.

B. Hypotheses and Survey Design

One hypothesis is that it is not feasible to collect accurate data on expenditures for all categories from one respondent. Another hypothesis is that a complete reporting of expenditures can be achieved by dividing into subpanels and asking each subpanel only for selected categories of expenditure.

The diary test for food etc. would take 6-months and involve four visits by the interviewer during 1-month to insure completeness and continued cooperation. The test would comprise a control panel and a research panel; each would have three subpanels for the different questionnaires.

The control panel would be comprised of 3,000 usable interviews and the research panel would be of the same magnitude. To identify the panel of the age 62 and over, 22,500 screenings would need to be made of which 12,400 would be discarded. The test would be conducted in about five sample areas.

4. PRICING

A. Questionnaire Design

For each of the relevant sections, modifications to the pricing questionnaires and procedures would need to be developed to address any special pricing rules for the purchases related to the older population, such as senior citizen discounts. Also, new procedures would have to be developed to use or adapt the reports provided in the expenditure surveys when item description and outlet locations are missing.

B. Hypothesis and Survey Design

The hypothesis is that all or most of the relevant detail needed for pricing can be obtained from the expenditure survey of the older population needs to be examined by attempting to locate the items and outlets reported by the older population. In addition, it is assumed that the responses will vary in completeness, and thus procedures need to be examined to ascertain the necessity and feasibility of the expenditure surveys.

For each of the research sections, a subsample of reported items and outlets would be selected and attempts to locate the item and outlet would be made. For each section about 500 outlets would be selected with about 2,000 individual items initiated to determine their availability.

Table A.1

Consumer Price Index, All Items, by population definition, December 1982=100

year-month	CPI-U	CPI-W	Experimental Index	year-month	CPI-U	CPI-W	Experimental Index
8212	100.0	100.0	100.0				
8301	100.2	100.1	100.4	8601	112.3	111.1	112.9
8302	100.3	100.1	100.5	8602	112.0	110.7	112.7
8303	100.3	100.4	100.6	8603	111.5	110.1	112.3
8304	101.0	101.0	101.2	8604	111.3	109.8	112.3
8305	101.6	101.5	101.7	8605	111.6	110.1	112.6
8306	101.9	101.8	102.0	8606	112.2	110.6	113.1
8307	102.4	102.1	102.4	8607	112.2	110.6	113.3
8308	102.7	102.6	102.7	8608	112.4	110.8	113.6
8309	103.2	103.1	103.2	8609	112.9	111.3	114.1
8310	103.5	103.3	103.4	8610	113.0	111.3	114.2
8311	103.7	103.3	103.5	8611	113.1	111.4	114.2
8312	103.8	103.3	103.7	8612	113.2	111.5	114.4
8401	104.4	103.7	104.4	8701	113.9	112.2	115.2
8402	104.9	103.9	105.1	8702	114.3	112.8	115.7
8403	105.1	103.9	105.3	8703	114.9	113.3	116.1
8404	105.6	104.2	105.7	8704	115.5	113.9	116.7
8405	105.9	104.6	106.0	8705	115.9	114.2	117.1
8406	106.3	104.9	106.3	8706	116.3	114.7	117.7
8407	106.7	105.3	106.7	8707	116.6	115.0	117.9
8408	107.1	106.3	107.2	8708	117.2	115.6	118.6
8409	107.6	106.9	107.6	8709	117.8	116.1	119.0
8410	107.9	106.9	107.8	8710	118.1	116.4	119.3
8411	107.9	106.8	107.9	8711	118.2	116.6	119.5
8412	107.9	106.9	108.0	8712	118.2	116.5	119.5
8501	108.1	107.0	108.3	8801	118.5	116.8	120.0
8502	108.6	107.6	108.8	8802	118.9	117.0	120.3
8503	109.0	108.1	109.2	8803	119.4	117.4	120.9
8504	109.5	108.5	109.7				
8505	109.9	108.9	110.1				
8506	110.2	109.2	110.5				
8507	110.5	109.3	110.8				
8508	110.7	109.5	111.1				
8509	111.0	109.8	111.4				
8510	111.4	110.1	111.7				
8511	111.7	110.5	112.1				
8512	112.0	110.8	112.4				

Table A.2

Consumer Price Index, Food and Beverages, by population definition, December 1982=100

year-month	CPI-U	CPI-W	Experimental Index
8212	100.0	100.0	100.0
8301	100.6	100.5	100.5
8302	100.9	100.9	100.9
8303	101.5	101.4	101.5
8304	102.0	101.9	102.0
8305	102.2	102.1	102.2
8306	102.0	101.9	102.2
8307	102.0	101.9	102.3
8308	102.2	101.9	102.3
8309	102.3	102.1	102.4
8310	102.4	102.3	102.5
8311	102.3	102.1	102.2
8312	102.7	102.6	102.7
8401	104.5	104.4	104.9
8402	105.4	105.3	106.0
8403	105.4	105.3	106.0
8404	105.5	105.4	106.0
8405	105.2	105.1	105.6
8406	105.4	105.3	105.9
8407	105.8	105.6	106.3
8408	106.5	106.2	106.9
8409	106.3	106.0	106.6
8410	106.3	106.0	106.7
8411	106.1	105.9	106.5
8412	106.6	106.2	106.8
8501	107.3	107.0	107.6
8502	108.0	107.8	108.5
8503	108.1	107.9	108.6
8504	108.1	107.8	108.5
8505	107.9	107.6	108.3
8506	108.0	107.8	108.4
8507	108.1	107.8	108.5
8508	108.2	107.9	108.5
8509	108.3	108.0	108.5
8510	108.4	108.1	108.6
8511	108.8	108.5	108.9
8512	109.5	109.2	109.7
8601	110.3	110.0	110.7
8602	110.2	110.0	110.7
8603	110.3	110.0	110.8
8604	110.6	110.3	111.1
8605	110.9	110.5	111.4
8606	111.0	110.6	111.4
8607	111.9	111.6	112.5
8608	112.7	112.5	113.4
8609	112.9	112.7	113.5
8610	113.1	112.8	113.7
8611	113.4	113.1	113.9
8612	113.6	113.3	114.1
8701	114.9	114.5	115.5
8702	115.3	114.9	116.0
8703	115.3	114.9	115.9
8704	115.6	115.3	116.2
8705	116.1	115.8	116.9
8706	116.6	116.3	117.5
8707	116.5	116.2	117.2
8708	116.6	116.3	117.2
8709	117.0	116.7	117.6
8710	117.1	116.8	117.7
8711	117.1	116.8	117.5
8712	117.6	117.2	118.2
8801	118.5	118.1	119.2
8802	118.6	118.2	119.2
8803	119.4	118.4	119.4

Table A.3

Consumer Price Index, Housing, by population definition, December 1982=100

year-month	CPI-U	CPI-W	Experimental Index
8212	100.0	100.0	100.0
8301	100.5	100.1	100.5
8302	100.7	100.2	100.6
8303	100.7	100.7	100.6
8304	101.2	101.1	101.1
8305	101.7	101.4	101.6
8306	102.2	101.7	102.0
8307	102.6	101.9	102.4
8308	102.7	102.3	102.6
8309	103.2	102.6	103.1
8310	103.3	102.6	103.2
8311	103.4	102.4	103.3
8312	103.5	102.3	103.4
8401	104.1	102.4	104.0
8402	104.6	102.3	104.7
8403	104.8	101.9	104.8
8404	105.3	101.8	105.3
8405	105.7	102.6	105.7
8406	106.3	102.9	106.1
8407	106.9	103.8	106.8
8408	107.3	105.5	107.2
8409	107.9	106.3	107.7
8410	107.9	105.9	107.7
8411	107.8	105.6	107.6
8412	107.9	105.7	107.8
8501	108.1	106.0	108.0
8502	108.6	106.4	108.5
8503	108.9	106.7	108.9
8504	109.3	107.1	109.3
8505	110.2	108.0	110.1
8506	110.8	108.5	110.7
8507	111.2	108.9	111.0
8508	111.6	109.2	111.4
8509	111.8	109.6	111.7
8510	112.0	109.7	111.9
8511	112.2	110.0	112.2
8512	112.5	110.2	112.5
8601	112.8	110.5	112.8
8602	112.7	110.4	112.6
8603	112.8	110.5	112.6
8604	113.1	110.8	113.0
8605	113.3	111.0	113.1
8606	114.2	111.8	113.8
8607	114.3	111.9	113.9
8608	114.6	112.2	114.1
8609	115.0	112.6	114.5
8610	114.8	112.2	114.3
8611	114.4	111.8	114.0
8612	114.5	112.0	114.1
8701	115.0	112.5	114.8
8702	115.4	112.8	115.2
8703	115.8	113.2	115.7
8704	116.2	113.6	116.1
8705	116.6	114.0	116.6
8706	117.4	114.7	117.3
8707	117.8	115.0	117.7
8708	118.5	115.9	118.5
8709	118.7	116.0	118.6
8710	118.6	115.9	118.6
8711	118.6	115.8	118.6
8712	118.7	116.0	118.7
8801	119.3	116.5	119.5
8802	119.7	116.9	119.9
8803	120.1	117.2	120.5

Table A.4

Consumer Price Index, Apparel and Upkeep, by population definition, December 1982=100

year-month	CPI-U	CPI-W	Experimental Index
8212	100.0	100.0	100.0
8301	98.7	98.5	98.5
8302	99.2	99.0	99.0
8303	100.5	100.6	100.3
8304	101.0	101.0	100.9
8305	101.3	101.2	101.2
8306	101.0	100.9	101.1
8307	100.7	100.6	100.7
8308	101.9	101.8	102.2
8309	103.5	103.3	104.0
8310	103.6	103.6	104.0
8311	103.6	103.5	103.9
8312	102.9	102.7	103.2
8401	101.4	101.2	101.5
8402	101.3	101.3	101.4
8403	102.6	102.6	103.3
8404	102.9	102.7	103.5
8405	102.7	102.5	103.3
8406	101.9	101.7	102.5
8407	101.5	101.2	101.7
8408	103.3	103.1	103.7
8409	105.5	105.4	106.0
8410	106.3	106.2	106.7
8411	106.0	105.9	106.3
8412	105.0	104.8	105.3
8501	103.2	102.9	103.4
8502	104.3	104.0	104.3
8503	106.1	105.9	106.4
8504	106.4	106.3	106.9
8505	106.1	105.9	106.5
8506	105.7	105.7	106.0
8507	104.8	104.7	104.8
8508	106.1	106.0	106.2
8509	108.3	108.2	108.7
8510	109.0	109.0	109.5
8511	109.1	109.0	109.6
8512	107.9	107.9	108.4
8601	105.9	105.9	106.0
8602	105.5	105.3	105.7
8603	106.6	106.4	107.0
8604	107.1	106.9	107.5
8605	106.6	106.4	106.8
8606	105.7	105.3	105.7
8607	105.0	104.7	105.2
8608	106.9	106.8	107.3
8609	109.5	109.4	110.0
8610	110.1	109.9	110.5
8611	110.0	109.6	110.4
8612	108.9	108.7	109.1
8701	107.0	106.7	107.1
8702	107.6	107.3	107.8
8703	111.1	110.8	111.5
8704	113.0	112.8	113.5
8705	112.6	112.2	113.0
8706	110.7	110.4	110.9
8707	108.7	108.4	108.4
8708	110.8	110.4	111.1
8709	114.8	114.3	115.5
8710	116.9	116.6	117.6
8711	116.9	116.6	117.8
8712	114.2	114.0	114.3
8801	111.9	111.6	111.9
8802	111.7	111.3	112.0
8803	115.8	115.3	116.3

Table A.5

Consumer Price Index, Transportation, by population definition, December 1982=100

year-month	CPI-U	CPI-W	Experimental Index
8212	100.0	100.0	100.0
8301	99.4	99.3	99.5
8302	98.4	98.3	98.5
8303	97.5	97.4	97.7
8304	99.2	99.1	99.4
8305	100.5	100.4	100.6
8306	101.2	101.1	101.3
8307	101.9	101.9	101.9
8308	102.5	102.7	102.4
8309	103.0	103.2	102.7
8310	103.5	103.6	103.1
8311	103.9	104.0	103.4
8312	103.9	104.0	103.4
8401	103.8	103.9	103.4
8402	103.7	103.9	103.4
8403	104.1	104.3	103.7
8404	105.0	105.3	104.4
8405	105.9	106.2	105.2
8406	106.2	106.5	105.4
8407	106.1	106.4	105.4
8408	106.1	106.4	105.5
8409	106.4	106.6	105.7
8410	107.0	107.2	106.3
8411	107.2	107.4	106.5
8412	107.1	107.3	106.5
8501	106.7	106.9	106.2
8502	106.6	106.7	106.1
8503	107.4	107.6	106.9
8504	108.6	108.7	108.0
8505	109.0	109.1	108.6
8506	109.2	109.2	108.8
8507	109.2	109.2	109.0
8508	108.8	108.8	108.7
8509	108.5	108.4	108.5
8510	108.9	108.8	108.9
8511	109.6	109.6	109.7
8512	109.9	109.8	110.0
8601	109.9	109.7	110.1
8602	108.3	108.1	108.6
8603	105.0	104.7	105.5
8604	102.9	102.4	103.4
8605	103.7	103.3	104.3
8606	104.7	104.2	105.3
8607	103.4	102.9	104.2
8608	102.2	101.5	103.1
8609	102.4	101.8	103.4
8610	102.7	102.0	103.5
8611	103.2	102.7	104.2
8612	103.4	102.7	104.5
8701	104.6	104.0	105.8
8702	105.1	104.6	106.3
8703	105.3	104.9	106.5
8704	106.2	105.9	107.3
8705	106.7	106.5	107.7
8706	107.4	107.2	108.4
8707	108.1	108.0	109.0
8708	108.6	108.5	109.6
8709	108.7	108.6	109.7
8710	109.2	109.1	110.0
8711	109.9	109.8	110.8
8712	109.7	109.5	110.5
8801	109.2	109.0	110.1
8802	108.9	108.6	109.7
8803	108.6	108.4	109.5

Table A.6

Consumer Price Index, Medical Care, by population definition, December 1982=100

year-month	CPI-U	CPI-W	Experimental Index
8212	100.0	100.0	100.0
8301	101.0	100.9	101.0
8302	102.1	102.1	102.1
8303	102.4	102.4	102.4
8304	102.7	102.7	102.7
8305	102.9	103.0	102.9
8306	103.3	103.3	103.2
8307	103.9	104.0	103.8
8308	104.6	104.6	104.5
8309	105.0	105.1	104.8
8310	105.5	105.6	105.3
8311	106.0	106.1	105.8
8312	106.4	106.5	106.2
8401	107.3	107.4	107.2
8402	108.5	108.6	108.3
8403	108.8	109.0	108.7
8404	109.2	109.3	109.0
8405	109.5	109.7	109.3
8406	109.8	110.0	109.6
8407	110.5	110.6	110.3
8408	110.9	111.2	110.8
8409	111.4	111.5	111.1
8410	112.0	112.2	111.7
8411	112.6	112.8	112.3
8412	112.9	113.1	112.7
8501	113.6	113.8	113.5
8502	114.4	114.7	114.3
8503	115.2	115.4	115.0
8504	115.7	115.8	115.5
8505	116.1	116.3	116.0
8506	116.7	116.9	116.6
8507	117.3	117.6	117.3
8508	118.2	118.3	118.1
8509	118.7	118.8	118.6
8510	119.3	119.4	119.2
8511	120.0	120.1	120.0
8512	120.5	120.7	120.5
8601	121.5	121.7	121.6
8602	122.7	122.8	122.9
8603	123.7	123.9	123.9
8604	124.4	124.5	124.6
8605	124.9	125.0	125.1
8606	125.5	125.6	125.8
8607	126.3	126.4	126.7
8608	127.1	127.2	127.5
8609	127.8	127.8	128.1
8610	128.5	128.6	128.9
8611	129.2	129.1	129.6
8612	129.8	129.9	130.3
8701	130.7	130.7	131.0
8702	131.5	131.5	131.8
8703	132.2	132.3	132.5
8704	132.8	133.1	133.0
8705	133.3	133.6	133.4
8706	134.1	134.3	134.0
8707	134.9	135.1	134.8
8708	135.4	135.7	135.3
8709	135.9	136.4	135.8
8710	136.5	137.0	136.4
8711	137.0	137.4	136.9
8712	137.4	137.8	137.2
8801	138.7	139.0	138.5
8802	139.8	140.3	139.5
8803	140.7	141.0	140.4

Table A.7

Consumer Price Index, Entertainment, by population definition, December 1982=100

year-month	CPI-U	CPI-W	Experimental Index
8212	100.0	100.0	100.0
8301	100.6	100.5	100.6
8302	101.3	101.3	101.3
8303	101.9	101.8	101.8
8304	101.9	101.9	101.9
8305	102.0	102.0	102.0
8306	102.3	102.4	102.3
8307	102.5	102.6	102.7
8308	102.8	102.9	102.8
8309	103.2	103.3	103.4
8310	103.8	103.8	104.2
8311	104.0	103.9	104.5
8312	104.0	104.0	104.6
8401	104.1	104.1	104.8
8402	104.8	104.8	105.4
8403	104.9	104.9	105.4
8404	105.7	105.6	106.4
8405	105.6	105.5	106.3
8406	106.0	106.0	106.9
8407	106.3	106.3	107.2
8408	106.9	106.8	107.7
8409	107.2	107.2	108.1
8410	107.7	107.5	108.7
8411	107.9	107.8	109.1
8412	108.4	108.2	109.5
8501	108.8	108.5	109.9
8502	108.9	108.7	110.0
8503	109.2	108.8	110.5
8504	109.7	109.4	111.0
8505	109.8	109.5	111.2
8506	110.3	110.0	111.8
8507	110.7	110.3	112.4
8508	110.7	110.3	112.4
8509	111.2	110.6	112.9
8510	111.9	111.3	113.7
8511	112.1	111.6	113.9
8512	111.8	111.3	113.7
8601	112.8	112.3	114.6
8602	113.3	112.7	115.2
8603	113.3	112.7	115.4
8604	113.5	112.9	115.6
8605	113.7	113.1	115.8
8606	114.1	113.5	116.2
8607	114.3	113.8	116.5
8608	114.4	113.8	116.7
8609	114.7	114.2	117.1
8610	115.3	114.6	117.7
8611	115.6	115.0	118.2
8612	115.6	115.1	118.1
8701	116.0	115.5	118.4
8702	116.2	115.7	118.6
8703	116.6	116.1	119.0
8704	117.2	116.7	119.6
8705	117.5	117.1	119.9
8706	117.6	117.2	120.1
8707	118.1	117.7	120.8
8708	118.3	117.8	120.7
8709	118.8	118.3	121.2
8710	119.7	119.0	122.0
8711	120.1	119.4	122.3
8712	120.2	119.7	122.5
8801	120.9	120.2	123.4
8802	121.1	120.4	123.7
8803	121.8	121.0	124.4

Table A.8

Consumer Price Index, Other Goods and Services, by population definition, December 1982=100

year-month	CPI-U	CPI-W	Experimental Index
8212	100.0	100.0	100.0
8301	101.1	101.4	101.2
8302	101.8	102.1	101.9
8303	101.9	102.2	101.9
8304	102.4	102.7	102.5
8305	102.5	102.9	102.7
8306	102.8	103.2	103.0
8307	103.9	104.5	104.0
8308	104.4	105.2	104.7
8309	106.4	106.6	105.9
8310	107.2	107.3	106.3
8311	107.7	107.8	106.9
8312	107.9	108.0	107.2
8401	108.6	108.8	107.8
8402	109.0	109.2	108.2
8403	109.2	109.4	108.4
8404	109.4	109.7	108.7
8405	109.6	109.8	108.9
8406	110.0	110.3	109.4
8407	110.7	111.1	110.2
8408	111.0	111.5	110.5
8409	113.7	113.5	111.8
8410	114.1	113.8	112.3
8411	114.3	114.1	112.7
8412	114.4	114.1	112.8
8501	115.4	115.2	113.6
8502	115.8	115.8	114.2
8503	116.1	115.9	114.4
8504	116.3	116.2	114.8
8505	116.5	116.4	115.1
8506	116.7	116.6	115.4
8507	117.4	117.4	116.1
8508	117.8	117.9	116.5
8509	120.4	120.0	117.9
8510	121.0	120.5	118.5
8511	121.1	120.6	118.6
8512	121.6	121.2	119.0
8601	122.6	122.3	119.9
8602	123.0	122.7	120.4
8603	123.3	123.0	120.8
8604	123.5	123.2	121.1
8605	123.6	123.4	121.3
8606	123.8	123.5	121.5
8607	124.6	124.6	122.3
8608	125.2	125.1	122.7
8609	127.6	126.8	123.9
8610	128.1	127.3	124.3
8611	128.2	127.5	124.5
8612	128.4	127.6	124.8
8701	129.4	128.8	125.8
8702	130.0	129.4	126.4
8703	130.2	129.6	126.8
8704	130.5	129.9	127.1
8705	130.8	130.2	127.5
8706	131.1	130.7	127.9
8707	132.0	131.6	128.7
8708	132.5	132.1	129.3
8709	135.2	134.5	130.5
8710	135.7	135.0	130.9
8711	135.9	135.2	131.1
8712	136.2	135.5	131.4
8801	137.5	136.9	132.7
8802	138.4	137.9	133.8
8803	138.8	138.3	134.3

Table A.9

Consumer Price Index for All Items less Shelter, and 12 month percentage changes, by population definition, end of year, 1982-87

year-month	ALL URBAN CONSUMERS		URBAN WAGE EARNERS AND CLERICAL WORKERS		EXPERIEMENTAL INDEX	
	Index	Twelve Month	Index	Twelve Month	Index	Twelve Month
8212	100.0		100.0		100.0	
8312	103.5	3.5	103.6	3.6	103.4	3.4
8412	107.3	3.7	107.2	3.5	107.3	3.8
8512	110.7	3.2	110.4	3.0	111.0	3.4
8612	110.8	0.1	110.1	-0.3	111.8	0.7
8712	115.5	4.2	114.9	4.4	116.3	4.0

Table A.10

Consumer Price Index for All Items less Shelter and Energy, and 12 month percentage changes, by population definition, end of year, 1982-87

year-month	ALL URBAN CONSUMERS		URBAN WAGE EARNERS AND CLERICAL WORKERS		EXPERIEMENTAL INDEX	
	Index	Twelve Month	Index	Twelve Month	Index	Twelve Month
8212	100.0		100.0		100.0	
8312	104.3	4.3	104.5	4.5	104.2	4.2
8412	108.7	4.2	108.9	4.2	108.7	4.3
8512	112.4	3.4	112.3	3.1	112.9	3.9
8612	116.3	3.5	116.0	3.3	117.6	4.2
8712	120.7	3.8	120.4	3.8	121.9	3.7

Table A.11

Consumer Price Index for All Items less Shelter, Energy, and Medical Care, and 12 month percentage changes, by population definition, end of year, 1982-87

year-month	ALL URBAN CONSUMERS		URBAN WAGE EARNERS AND CLERICAL WORKERS		EXPERIEMENTAL INDEX	
	Index	Twelve Month	Index	Twelve Month	Index	Twelve Month
8212	100.0		100.0		100.0	
8312	104.1	4.1	104.3	4.3	103.8	3.8
8412	108.3	4.0	108.5	4.0	108.0	4.0
8512	111.6	3.0	111.6	2.9	111.5	3.2
8612	115.0	3.0	114.8	2.9	115.3	3.4
8712	119.1	3.6	118.9	3.6	119.2	3.4

Senator PROXMIRE. Commissioner, this year there about 600,000 fewer teenagers than there were a year ago. Unemployment, as we know, is typically much higher among teenagers than among adults.

Do you adjust your seasonal factor to account for the declining number of teenagers?

Mrs. NORWOOD. It is very difficult to do so. We certainly try to use the best procedures possible, and the procedure that we use does put a lot more emphasis on the recent years than the earlier years.

We also break this down, as I am sure you are aware, among the different age and sex groups.

Senator PROXMIRE. When you say there are difficulties, does that mean that if you were able to fully allow for the fact that there has been a decline in teenagers, that it might show a higher level of unemployment on a comparable basis?

Mrs. NORWOOD. I am not sure about that. There certainly is downward pull on the unemployment rate coming from the demographics. I don't think there is any doubt about that.

Teenagers always have higher unemployment rates, and the more of them there are, the more upward pull there is on the unemployment rate.

I think in the summer months, however, the timing of the survey week as well as the shifts in things like school closings probably have a bigger effect.

But you are quite right that there is downward pull on the unemployment rate caused by the fact that younger people are fewer in number.

Senator PROXMIRE. How do you account for the fact that with the lowest level of unemployment in 14 years and with a fairly consistent improvement in the employment picture, we have had a relatively slight increase in wages, real wages particularly?

I have been astonished by the fact that with the usual situation, supply and demand, with labor particularly in some parts of the country like the Northeast being rather scarce, there hasn't been any kind of a pattern of substantial increase in wages which you might expect and which we have had in the past when we have had diminishing unemployment.

How do you account for that?

Mrs. NORWOOD. I think there are several reasons. One is that the sectors of the economy that in the past were primarily responsible for much of the wage setting—were the large unionized establishments in manufacturing—have been in difficulty in recent years. Formerly, those industries often set a pattern the rest of the economy would tend to follow.

The proportion of union membership in the labor force has declined. So I think one of the reasons that there hasn't been more upward push is that the strength of the trade union movement has been reduced and that the industries which traditionally were pushing wages up have been in employment difficulties.

Senator PROXMIRE. Apropos of that, I have seen figures that show that all of the increase in jobs, all of it over the past 10 years, the full 10 million increase in jobs, has been in firms that employ

500 or fewer people and more than half in firms that employ 50 or fewer people.

Now, those firms typically are not as organized. Often they are not organized at all compared to the bigger firms. The firms that employ more than 500 have actually lost jobs according to the figures I have seen.

As you say, these are the firms that are organized and that set the pattern and trend usually in wage increases. Is that right?

Mrs. Norwood. I think there is some truth to that, but I am not sure that all of the growth has been in the smaller establishments, but they certainly have been growing faster than others.

Many of them, however, are additional establishments in larger companies or parts of conglomerates, so one does need to be a little bit careful about that data. But I think the fact that the manufacturing industry has clearly still not recovered the numbers of jobs that were lost during the 1981–82 recession—it is only about two-thirds recovered from that—is the reason that we are not seeing increased pressures in manufacturing.

Now, that means in part that we are more competitive than we were before and we are seeing in many ways, an export-driven job market right now.

Senator Proxmire. You report an improvement in black unemployment.

Mrs. Norwood. Yes.

Senator Proxmire. Is it statistically significant?

Mrs. Norwood. The improvement for the black population from May to June is almost entirely the result of the drop in teenage unemployment, black teenage unemployment from May to June, and that is a statistically significant figure.

We should remember, however, that it tends to bounce up and down. It is considerably below the level of a year ago. It was 35 percent in January. It was 36.9 in March, 34.8 in May. It is 28.4 now. It may bounce up a bit. As I said, that seems to be its tendency.

Senator Proxmire. I have a parochial reason for being especially sensitive to that. The U.S. Labor Department reports that the black rate for Wisconsin unemployment stood at roughly 22 percent in 1987, and was down from 27 percent in 1986 when it was the highest of any State in the Union. A shocking situation.

Meanwhile, white unemployment was 5.4 percent in 1987, whereas black unemployment was about five times as high. As I say, it was the worst in the United States in our State.

We have a situation that is changing rapidly. The Middle West now has higher unemployment among blacks than in the South. I think that has rarely been true in the past.

Is there any reason that you know of that would explain this?

Mrs. Norwood. Well, the changing industrial composition tends to make people move. But perhaps Mr. Plewes knows more about this than I.

Mr. Plewes. I think there are a couple of things going on here. One, of course, is the industrial mix that the Commissioner is talking about. A good number of the black population were in the heavy industries that were the hardest hit during the recession and haven't recovered. I think that is one of the things.

I think the other thing, especially in northern areas, is the concentration of the black population in central cities. I think that is probably true in Wisconsin. I know it is true in many other areas. In central cities we see very little job growth. Most of the job growth is in suburban areas or in midsize cities. So, a lot of the recovery that we have seen has not taken place in the areas in which the black population work.

Senator PROXMIRE. They say here that the black unemployment rate was 17.9 percent in the Midwest. The South had the second-highest rate of 12.7 percent. They also argue—this is an editorial in the Milwaukee Journal, which is an excellent paper—they also argue that "the Feds provide," they say, "only a fuzzy picture of black unemployment in cities in States. A sharper picture would require more study than available resources allow."

Mrs. NORWOOD. That is right.

Senator PROXMIRE [continues reading]: "The Federal Government ought to find the money to get the job done right. The jobless rate is a vital barometer that guides social policy and thus needs to be as precise as possible."

They say "the figures understate the unemployment problem, particularly among blacks, because of discouraged workers which is more common among blacks."

Is that all correct?

Mrs. NORWOOD. I think that is correct.

Senator PROXMIRE. How much would it take to provide substantial improvement in the unemployment figures, particularly this particular social problem which is so serious?

Mrs. NORWOOD. I don't know exactly the dollar amounts. I can tell you that as part of our planning of the redesign of the current population survey, our labor force survey, for the 1990's, we are looking at the possibility of expanding the size of that survey to provide data for each of the States each month. This is one approach that could be taken.

Another approach that could be taken would be not to have the data by State, that is, not to have the improved geographic coverage but, rather, to have improved data for minority groups who tend to be concentrated in particular areas of the country.

There is a tradeoff there, and given the uses of data, we have been considering an expansion to provide data every month for every State. It would obviously have higher relative error than the data for the country as whole, and we estimate that we would have to increase the survey to about 90,000 households, nearly doubling it.

Senator PROXMIRE. What is the cost of that?

Mrs. NORWOOD. I can't tell you exactly. We are looking at that now. One of the things we are looking at is the possibility of using computer-assisted telephone collection for that portion of the survey that is done by telephone. We think that that would, first of all, provide for better statistical reliability, and, second, it might permit an expansion that would cost less than if we were to do it otherwise. We may be able do it more efficiently out of two or three computer-assisted telephone facilities.

We are also looking at the questionnaire itself. And I am pleased to say that with the help of the Congress, we this year did receive some funds to develop a cognition laboratory, or a survey procedures laboratory, in which we are beginning to interview people who are unemployed to find out whether they understand the questions we are asking.

Senator PROXMIRE. My time is up. Before I yield to Senator Roth, let me just say I am talking not about teenage blacks with these shockingly high figures of well over 20 percent; I am talking about all blacks.

Senator ROTH. Thank you, Senator.

One of the criticisms I have heard is that many of these new jobs are temporary or part-time jobs. What has been the trend in these two areas, part time and temporary as a portion of the work force? Has the involuntary part been increasing, remaining relatively stable, or how do you see that trend?

Mrs. NORWOOD. The involuntary part time increased markedly during the recession and it rose to a very high level. It has come down since then, but it remains at a higher level than it has been historically, primarily because it went up so much during the recession.

It is now at about the level that it was at the end of last year. It bounces around, but as I said in my statement, it hasn't really shown any clear trend. It has come down considerably from the recession highs. It is now at 5.3 million, while at the end of 1982 it was 6.7 million. So it is considerably below that.

As for part-time and temporary work, we have 14.5 million people now who are working part time because that is exactly what they want to do. I think we should not confuse these two groups. The part time for economic reasons is a problem group. The voluntary part time are people who are doing just what they want to do.

The rapid increases in part-time jobs occurred during the 1970's. In the 1980's, they have continued to increase, but the pace has slowed down.

Temporary help has been fast growing and continues to be a fast-growing industry. Our projections are that it will continue to do so. The fastest growth for the temporary help industry came in that early period after the recession. Its increases have slowed down since then, but the temporary help industry is a very interesting one. It includes minimum wage jobs as well as very, very high-paid, very highly qualified people. And we have just done a survey of their wages and fringe benefits so that we know a little bit more about them. I think it is a very misunderstood industry.

Senator ROTH. Let me ask you a further question.

Of new jobs, the involuntary part time, is that a significant factor in the new jobs that have been created?

Mrs. NORWOOD. I think whenever we have 5-plus million people, that that is significant, but it is also true that most of the 17 million jobs that have been created during the recovery period have been full-time jobs.

Senator ROTH. What percentage would be involuntary part time?

Mrs. NORWOOD. Ninety percent of the jobs added during the expansion period have been full-time jobs.

Senator ROTH. How large is the temporary industry relative to the size of the work force?

Mrs. **Norwood**. The temporary help supply industry is the only one in which we have specific data. There are other temporary workers on payrolls, but we can't differentiate them. There are somewhere around 800,000, 900,000, perhaps 1 million workers employed through temporary help supply firms now.

Senator **Roth**. When we were discussing the fact that wages have not risen as rapidly as in the past, you mentioned the state of unions may be part of the answer. Would international competition be a primary factor?

Mrs. **Norwood**. Wages are usually driven by supply and demand. We have seen in manufacturing a decline in demand for workers, in a sense, because we have seen many industries declining in employment and a tightening in the production. We have seen a lot of inefficient plants closing down and more machinery being used, and productivity in manufacturing has done fairly well.

Wages in services are rising, as you would expect, because there is enormous demand going on. Most of the jobs that are being created are in the service-producing sector, so I think we will be seeing more of a push on the wage side in the service-producing sector than in manufacturing.

Senator **Roth**. It is my understanding that over the last year, about 2.7 million jobs were created. Of these, 2 million were in managerial and professional occupations and 0.4 million in precision, production, craft and repair.

Are these low-wage jobs, or how would you categorize them?

Mrs. **Norwood**. We are seeing a shift toward occupations that require a lot more training, a lot more use of cognitive abilities. Those jobs have tended to pay better than many of the other jobs.

As more and more people have the qualifications, of course, and as we see the baby boom generation growing older and moving in larger numbers into those jobs, we may see some effects of the age cohort. But generally they are fairly good jobs.

We are also, of course, creating jobs in retail trade, a lot of jobs in retail trade, some of which are not such high-paying jobs, but many of them are managerial, professional jobs which require a lot of training and tend to pay better than average.

Senator **Roth**. Let me ask you this. Of that 2.7 million jobs that were created this last year, how many of these were managerial and professional?

Mrs. **Norwood**. Mr. Plewes will calculate it for us.

Mr. **Plewes**. Roughly half. Then if you add professionals, you get another 600,000, so we are at three-quarters.

Mrs. **Norwood**. Three-quarters.

Senator **Roth**. As I read it, your managerial and professional in June 1987 were 27.2 million, and June 1988, 29.1. So that is a 2 million increase.

We mentioned the slowing down of the number of people entering the job market. What do we see as a trend as to the number of people entering the job market in the next 5 to 10 years, and what does that mean or what should that mean to us in a policymaking position?

Mrs. **Norwood**. We clearly are going to see a labor force that is growing much more slowly in the future than in the past. In fact, we expect that as we move toward the next century, the labor force will grow at only about one-half the rate that it has grown in the past.

What does that mean? It means that life should be much easier for us because it will be easier to hold an unemployment rate within reasonable limits. The more the labor force increases, the more jobs you need to have to take care of the people who are coming into the labor force. And in some ways, employment tends to be driven by the labor force.

In any case, we find that we are often on a treadmill. We have to keep running to stand still. As the labor force grows more slowly, we will be able to run in place more easily.

Senator ROTH. Just one followup question if I might, Senator.

Do you face possible labor shortages?

Mrs. NORWOOD. There may be shortages. I think that those shortages are not going to be overall shortages but, rather, that there may be particular occupations requiring people with special training and the mix of people and training may not quite be the right fit.

What that supports is that we need to give a great deal of attention to ways to train people so that they will be prepared for the kinds of jobs that are growing. The jobs we are losing are not necessarily the kinds of jobs that we are gaining, and that is certainly going to continue in the future, suggesting that people who lose their jobs in some areas may not be able to find jobs that they can get without additional training. So training becomes extremely important as we move toward the next century.

Senator ROTH. Thank you, Senator.

Senator PROXMIRE. Mrs. Norwood, obviously the unemployment figures are very encouraging. However, for the last 4 months the employment and unemployment figures have been bobbing up and down in a kind of an unusual manner. We now have completed the second quarter.

Looking at the April, May, and June figures, what information do they provide as to whether or not the economy continues its strong first quarter growth into the second quarter?

Mrs. NORWOOD. We are seeing continued employment growth. It is moderate growth, but it is steady growth and I think it is significant growth. It is important to note that that growth is occurring in manufacturing as well as in service-producing industries, particularly in durable manufacturing, which suggests that we are doing fairly well on the export side.

Senator PROXMIRE. Is there any particular reason why it has been rather erratic, it has gone up and down? Last month, for instance, unemployment was up and this month it is almost sensationally down. It is down to the lowest level, as you say, in 14 years.

Mrs. NORWOOD. The household survey often moves erratically. When we have an enormous change, as we did last month of a drop of 500,000, we warned that there would be a correction in another month or two. We have had that correction.

In a sense, we really didn't have that drop. We didn't have that increase in unemployment. What we have had is a continuing slow decline in unemployment.

Senator PROXMIRE. Are we likely to get another big fat correction for July? Should we not be surprised if we get it?

Mrs. NORWOOD. Anything could happen. But I don't see anything in this month's numbers to suggest that there is a whopping correction of the kind that we had before. But we should remember that the June survey week was slightly later than normal.

As you know, we include the week containing the 12th of the month, and that can fall, say, on a Monday or a Sunday, or it can fall on a Friday. It fell late this month and that may mean that we picked up a little bit of the employment that we would have picked up next month.

But the point is that those people are there and they are employed.

Senator PROXMIRE. From the inflation standpoint, usually there is a tradeoff, as we all know, between unemployment dropping and prices rising.

Now, during the past 3 months, the Consumer Price Index has risen at a 5.3 percent annual rate, more rapid than last year substantially. During the same period, the Producer Price Index for finished goods—Producer Price Index—that is the wholesale price we used to call it, which suggests what prices are likely to be in the future—that has risen at a 6-percent rate and the Producer Price Index for intermediate goods is an 8-percent rate, and for crude goods I understand it is about an 8.5-percent rate.

Now, do those figures shed any light on the current fear that the economy is beginning to overheat and that inflation is accelerating?

Mrs. NORWOOD. Let me take a shot at that and then ask Mr. Tibbetts, who knows much more about it than I, to discuss it.

I would say that we do not see evidence in either of our index systems suggesting a tremendous overheating in prices. We have seen shifts in energy prices; we have seen shifts in food prices. We are seeing some worrying signs here and there in intermediate goods in the producer price program, but I don't see any overall serious problem on the horizon yet.

Senator PROXMIRE. As we sit here and look out at this bright, hot, sunny day, this is something that is hitting the country everywhere, especially in the Middle West, but also in the South and other parts of the country. We have been told that the corn corp and the wheat crop are damaged and we are probably going to have less. That means that in the short run, meat prices will go down, and in the long run they will go up sharply, and the price of food generally is expected to rise.

Won't that have an effect that we haven't seen so far and are likely to see in the future in higher food prices and therefore higher overall cost of living?

Mrs. NORWOOD. Tom, why don't you answer that?

Mr. TIBBETTS. Yes, I think that is quite right, Senator. The food component of the finished goods index is a little over a fourth, so anything that happens there is going to——

Senator PROXMIRE. Over a fourth?

Mr. TIBBETTS. It is 26 percent. We have already seen some acceleration last month. The upcoming month is probably foretold somewhat by the Agriculture Department's prices received by farmers. I think they say they are up 3.7 percent, which should show the kind of increase that we are going to be expecting in the Producer Price Index.

You outlined yourself the countervailing forces that make it hard to predict. We have the downturn which started last month and certainly will continue in the livestock and meats shortrun phenomenon. We have stockpiles that are probably good for 12 months in grains, but not in soybeans.

So what we anticipate is, because of the shortrun downturn in livestock and meats and the uncertainties of what is going to be done in the stockpiles, that the acceleration will be dampened somewhat but it certainly will occur, and as I said at the beginning it will have a heavy weight in the overall index.

Senator **Proxmire**. The figures that you provide for us are very helpful for us on the cost of living, and now they are more sophisticated, as I understand it, than they have before. You have an urban price index, you have a wage earner price index, and you have an elderly price index.

Mrs. **Norwood**. We had a study of an elderly price index, not a continuing series.

Senator **Proxmire**. What I have here is an indication that between 1983 and 1987, the wage price index, which is what we usually, I guess, rely on to some extent, increased 16.5 percent; the urban price index by more, and that includes more people; the elderly price index which includes even more, 19.5 million I guess it is—that is wrong. Let me start over again. I am glad staff corrected me on that.

Nineteen and a half doesn't refer to the number of people, it refers to the percentage increase, 19.5 percent increase in the index for elderly. So that the inflation is hitting different groups in a different way.

How accurate and reliable are these figures in your judgment?

Mrs. **Norwood**. The two official indexes we consider to be quite reliable.

Senator **Proxmire**. That's the urban and wage earners?

Mrs. **Norwood**. Yes.

The experimental index is merely a reweighting.

Senator **Proxmire**. Experimental. Will you explain that?

Mrs. **Norwood**. That is the older Americans index, which we call experimental.

Senator **Proxmire**. Why don't you call it elderly so we understand it?

Mrs. **Norwood**. Well, for several reasons, Senator. As I get older, I begin to wonder what elderly means.

Senator **Proxmire**. Well, I am 72 years old and I don't consider that elderly at all.

Mrs. **Norwood**. Second, I think that we have to understand that all that we have done is taken our existing expenditure survey and taken a small piece of it, a very small piece of it, with a lot of sampling error surrounding it, and reweighted the relative importance or the expenditures of consumer units which have people 62 years of age and over in them.

We have not changed the store sample. Maybe they don't go to the same stores. Maybe they go to places closer to home than out on the highways or in discount stores, and there may be differences in price change.

We haven't changed the items. If you think about medical care, you know, the older population is not having appendectomies and ear problems, they don't go to pediatricians. They may have heart surgery or other kinds of geriatric problems.

Senator **Proxmire**. Well, you have far more medical problems as you get older, don't you?

Mrs. **Norwood**. Yes, but they are different. And what we are measuring in terms of prices and physicians and hospital procedures is for the all urban and for the wage earner group. If we were to do a correct index for older Americans, we shouldn't have child care in it, and we shouldn't have appendectomies. Rather we should have the kinds of things that represent the expenditures of older people.

Also, we would need to be certain to represent the actual prices they pay. In some parts of the country, Montgomery County for example, people who are 65 and over have discounted Metro fares. There are a lot of senior citizens' discounts that may or may not affect an index of that kind.

Actually, these indexes are really fairly close together, particularly if you look at the all urban index and you look at it each year. During the first 2 years of this 5-year period, the wage earner index had a different home ownership component in it, so some of this difference between them was based upon the way in which home ownership was specified.

But otherwise, the only big differences were in 1986, a year when there was very low inflation. In 1987, for example, the all urban, the CPI–U, rose 4.4 percent, while the experimental index rose 4.5 percent. In 1985 the increases were 3.8 and 4.1; in 1984, 3.9 and 4.1; and in 1983, 3.8 and 3.7.

So the experimental index is much closer to the all urban index, and that is what you would expect because the all urban index includes the expenditure experience of older people as well as younger people. The wage earner index excludes most retired people because it is based upon families whose major source of income comes from a wage earner occupation.

Senator **Proxmire**. Thank you. My time is up.

Senator Roth.

Senator **Roth**. According to the BLS study I referred to, the portion of families in the lower income group declined from 35 percent in 1982 to 31.6 percent in 1986.

Is this consistent with the contention that most of the new jobs are bad jobs, or that job quality is declining?

Mrs. **Norwood**. I don't think that this study attempted to look at the quality of jobs, but it certainly is not consistent with the view that all the jobs we are creating are low-wage jobs.

What this study does is to try to—and I think it is a very real contribution, by the way—it tries to look at the sensitivity of different definitions of the middle class, since as Senator Proxmire pointed out, what is the middle class? What income levels do you have the break at?

I think it attempted to do that using some fairly sophisticated techniques. You are quite right that it suggests that the middle class, as defined in this article after a series of iterations, has been reduced in size and that many of those people have moved up in income.

The other conclusion that I think is extremely important is that, in part as a result of it, the inequality of income between the bottom and the top has increased considerably, and that is very worrying.

Senator ROTH. How much has the employment cost index increased since 1981 in real terms? Is that about 7 percent or so?

Mrs. NORWOOD. I don't have that figure. Mr. Stelluto should have it.

The employment cost index was 92.6 in March 1981 and 96.9 in March 1988. We will calculate that percentage change in a moment. That is in real terms, the ECI. It has gone up considerably. It is still below the levels of 1979, of course.

It has gone up about 4 percent, 4.6 percent.

Senator ROTH. Is that considered the most comprehensive measure?

Mrs. NORWOOD. Yes, because it adjusts not only for industry, but also for occupational change. And that is quite important now as we see a continuing shift toward differences in occupational mix as well as in industry mix.

The average hourly earnings index that we also produce which will be discontinued in January, doesn't correct as much for, doesn't adjust I should say, for occupational mix as does this employment cost index. The ECI is a better measure to look at for wage change generally.

It also includes fringe benefit costs to employers. We will continue, of course, to publish our average hourly earnings data. They come out every month, but we will discontinue the hourly earnings index because we think that it should be replaced by the ECI.

Senator ROTH. I would like to go back a minute to some questions I was raising at the end of my prior turn.

You mentioned the importance of training. I wonder if you would like to expand either on that or other problems that you see with the decline in growth of the work force.

Mrs. NORWOOD. I think we have two kinds of difficulties really. You have the people who are being displaced because of the industrial restructuring that is occurring. Those people have been working often for many, many years at jobs and may be doing quite well. But there aren't any available jobs like the ones they lost. These people need retraining.

Many of them can obtain that retraining very easily and some people do very well on their own. Others need help. Some of them don't have the basic reading and writing skills that are necessary in order to take the training.

Then we have, of course, a lot of young people coming up. We always have young people, even though birth rates declined some years ago. And as they go through our educational system and move into the work force, we are seeing now that we have very serious problems because the educational system just does not seem to be providing the people who go through it with the basic skills necessary to operate in the work force.

We are finding when we talk to a lot of employers, that they are complaining that they often need to provide basic education for workers before they can train them on the job. That seems to be a common problem.

Another problem that I foresee is that as we move forward, the work force will have a higher proportion of minorities in it. Minorities have always had a much harder time in the work force, in the past at least, and I think we have just got to recognize that we are going to have a much larger proportion of the work force in the group that often has been left behind.

As the occupational shifts occur, these are the groups who generally have had less education, in particular less university education. Therefore, that tilt in jobs could well exacerbate the problem of those who are left behind.

Then the fourth problem that needs to be addressed is the fact that the population will be getting older. And, we are finding that men continue to have a slow decline in their labor force participation rates as they retire earlier.

As the teenage component of the labor force gets smaller and the retired component of the population increases in size, there may be some substitutability of workers doing part-time work when they are retired.

The Secretary of Labor has established a Task Force on Older Workers to try to look at what needs to be done to be ready for some of these issues. I think that is an important area that we need to think about.

Senator ROTH. One final question. How is our civilian unemployment rate comparing with our European nations, such as the United Kingdom, Germany, and France?

Mrs. NORWOOD. It is doing very well, extremely well. We, of course, have higher unemployment than the Scandinavian countries. We always have. That is because of different policies in general.

But our unemployment rate is lower than that for Canada; considerably lower, probably half that of France; much lower than Germany; lower than Italy; and several points lower than the United Kingdom. The only country, of the ones that we calculate rates for, the major countries, that has a lower rate than we besides the Scandinavian countries is Japan.

Senator ROTH. I would assume that probably is true of the newly developed countries, too.

Mrs. NORWOOD. Well, it may be. But there are measurement problems with many of the developing countries, and it is rather hard to get the data on the same basis as the United States. Even with Japan, if the treatment of discouraged workers was similar to ours, the Japanese rate would be much closer to that of the United States.

Senator ROTH. So their measurement is somewhat different.

Mrs. NORWOOD. Well, their conditions are somewhat different. We have adjusted for the measurement differences. But we do not include discouraged workers. If we were to include them and if the Japanese were to include them, the rates would be much closer together. They have many more of them than we.

Senator ROTH. Thank you, Mrs. Norwood.

Senator **Proxmire**. Mrs. Norwood, I am fascinated. I just received this data. I haven't seen it before. It does try to define the middle class on the basis of income and it is really astonishing to me because it shows that the definition now is quite different than it was in 1969. In 1969, middle class was $7,180 to $20,104 for CPI UX-1, and it is roughly the same for CPI-U and FWPCE. Middle class, $7,180 to $20,104.

Now that has been revised so that in 1986, middle class was $20,000 to $56,000 according to this table that I have here on page 8 of the Monthly Labor Review, May 1988, $20,000 to $56,000.

Now, the interesting thing to me is that the middle class did not decline simply because so many people were getting into the so-called upper class, but so many people fell into the lower class. In every single category, on the next page, table 3, it shows that the lower class increased and the upper class increased. So there was a squeeze both ways.

Mrs. **Norwood**. The point that I made earlier that I think is a very important one is that we are seeing an increase in the inequality of income between the top and the bottom. And that is a serious problem.

It is true, however—I think—that many people who were sort of in the middle, no matter how you define that, have moved up, but we have a very much larger difference between the top and the bottom. And that is a serious problem for us.

Senator **Proxmire**. So we have more people in the upper class. I think all of us don't like that "class." It should be upper income. Anyway, they call it upper class here. More people in the upper class and more people in the lower class and fewer people in between.

Are you comfortable with the change in definition from $7,000 as the figure in 1969, up to $20,000 as the point where you fall out of the middle class now, and from $20,000 up to $56,000 when you move into the upper class?

Mrs. **Norwood**. I don't think that is a definition.

Senator **Proxmire**. That was related to inflation primarily?

Mrs. **Norwood**. That is not really a definition. That is the distribution from the surveys that have been used for these purposes.

One could get at different income groups, different income intervals, and there are other tables in this report which do that, but what that does really is to use the different price indexes to see what that does to the income distributions.

Senator **Proxmire**. It also shows in another chart that proportion of aggregate income held by the lower class, 1969 to 1986, using interval deflator approach, has dropped steadily. In other words, lower class or lower income people are getting less and less and less as the years go on, 1969 to 1986, at a fairly steady rate.

Mrs. **Norwood**. That is right. That is what I meant by saying that we do need to be aware of this inequality issue. It is fine that some people seem to be doing better, but other people are not.

Senator **Proxmire**. Now, in previous expansions when the unemployment rate approached the current level, strike activity would pick up. Currently there is virtually no news of any strikes anywhere in the United States. In fact, the figures I have seen are that they have the lowest proportion of strikes or stoppages that we have had at any time since records have been kept on that.

Mrs. **Norwood**. That is correct.

Senator **Proxmire**. Which seems to contradict the fact that with the unemployment rate rising, you normally have more strikes as people demand more pay.

Would you briefly describe the current strike situation compared with similar periods in the past? And is there an explanation for the current low level of strike activity?

Mrs. **Norwood**. Yes. I think that it is quite clear that we have much lower strike activity now than we did before. It is just what you would expect really.

Senator **Proxmire**. Why would you expect that? I would expect it to be the other way.

Mrs. **Norwood**. Most of the strike activity occurs in manufacturing industries, in companies that are generally large companies and that are unionized companies. We have a decline in unionization and we have declining employment and plants closing in many manufacturing industries which makes it much harder for people to have much bargaining strength.

So you would expect to see the amount of strike activity declining under conditions like that.

Senator **Proxmire**. One more question. The Senator from Delaware pointed out that international competition might be a factor in holding down wages.

I understand that now for perhaps the first time, wages of our top competitors are higher than they are here. In Germany they are substantially higher, West Germany; in Japan, partly because of the drop in the value of the dollar, the wages I understand are expected to be higher. They may be substantially higher this year than they are here.

We have always argued in the past that it is hard for us to compete because our wages are higher, and this does not seem to be the situation now. Is that correct?

Mrs. **Norwood**. Yes.

A lot of countries have shifted, if you look at hourly compensation. There are still some, of course, that are lower than we. But you have to understand that a lot of this, as I am sure you do as you pointed out in your comment, is based to a large extent on the differences in exchange rates.

But if you look at the indexes of hourly compensation costs for production workers in manufacturing, we find that we still are higher than Canada and Australia. Japan has risen to about 84 percent of our wages.

Senator **Proxmire**. So we are higher than Japan. I was wrong about that.

Mrs. **Norwood**. Austria is 95 percent of ours.

Senator **Proxmire**. Austria?

Mrs. **Norwood**. Yes.

Belgium is higher. Denmark is higher. Finland is close, 97. Germany is higher, 125.

Senator **Proxmire**. Much higher.

Mrs. **Norwood**. This is an index, but I think it is probably the best way to look at it.

Senator PROXMIRE. How about the Scandinavian countries?

Mrs. NORWOOD. Well, Finland is 97. Sweden is 113. The United States is 100. So Sweden is higher.

Senator PROXMIRE. Norway? Denmark?

Mrs. NORWOOD. Norway is 131.

Senator PROXMIRE. Hagar the Horrible is doing fine.

Mrs. NORWOOD. Denmark is 108.

Senator PROXMIRE. Well, thank you very much, Commissioner Norwood. As usual you have done an outstanding job and we very much appreciate your testimony.

The committee will stand in adjournment.

[Whereupon, at 11:05 a.m., the committee adjourned, subject to the call of the Chair.]

EMPLOYMENT-UNEMPLOYMENT

FRIDAY, AUGUST 5, 1988

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, DC.

The committee met, pursuant to notice, at 9:50 a.m., in room SD-628, Dirksen Senate Office Building, Hon. Paul S. Sarbanes (chairman of the committee) presiding.

Present: Senators Sarbanes, Proxmire, Roth, and D'Amato.

Also present: Judith Davison, executive director; and William Buechner, Chris Frenze, and Dale Jahr, professional staff members.

Senator **SABANES**. The committee will come to order.

I am sorry to have held you and delayed in starting, but there was a vote on the floor of the Senate. In view of the fact that we are delayed in starting, I will set aside any opening statement so we can get to our business and simply say that we are very pleased to have you and your associates back with us this morning. We are prepared to hear from you.

Do any of my colleagues have any comments?

Senator Roth.

OPENING STATEMENT OF SENATOR ROTH

Senator **ROTH**. I have a very short statement, Mr. Chairman.

It does give me pleasure to welcome you here, Mrs. Norwood, and your colleagues.

Once again we have positive employment news as the closely watched payroll survey posted a 285,000 employment gain in July. This is, of course, the longest peacetime expansion in U.S. history, which keeps generating new jobs and opportunities for American workers. More Americans are working now than ever before.

I think especially encouraging is what BLS calls the continued vigorous employment growth in the number of factory jobs. During July the expansion created 70,000 manufacturing positions. During the expansion 16 million new jobs have been created. The majority of these jobs are in middle- to high-paying income; over 40 percent of the net addition to employment through June of this year was in the managerial and occupational category. Skilled blue collar occupations have shown strong gains as well.

Mr. Chairman, I won't read the rest of my opening statement but ask that the complete opening statement be included in the record.

Senator **SARBANES**. The complete opening statement will be included in the record.

[The complete opening statement of Senator Roth follows:]

COMPLETE OPENING STATEMENT OF SENATOR ROTH

IT GIVES ME GREAT PLEASURE TO JOIN IN WELCOMING OUR WITNESS BEFORE US TODAY, BLS COMMISSIONER JANET NORWOOD.

ONCE AGAIN, DR. NORWOOD POSITIVE EMPLOYMENT NEWS, AS THE CLOSELY WATCHED PAYROLL SURVEY POSTED A 285,000 EMPLOYMENT GAIN IN JULY. THE LONGEST PEACETIME EXPANSION IN U.S. HISTORY KEEPS GENERATING NEW JOBS AND OPPORTUNITIES FOR AMERICAN WORKERS. MORE AMERICANS ARE WORKING NOW THAN EVER BEFORE.

ESPECIALLY ENCOURAGING IS WHAT BLS CALLS THE CONTINUED "VIGOROUS EMPLOYMENT GROWTH IN THE NUMBER OF FACTORY JOBS." DURING JULY THE EXPANSION CREATED 70,000 MANUFACTURING POSITIONS.

DURING THE EXPANSION 16 MILLION NEW JOBS HAVE BEEN CREATED. THE GREAT MAJORITY OF THESE JOBS ARE IN MIDDLE TO

HIGH PAYING POSITIONS. OVER 40 PERCENT OF THE NET ADDITION TO EMPLOYMENT THROUGH JUNE OF THIS YEAR WAS IN THE MANAGERIAL AND OCCUPATIONAL CATEGORY. SKILLED BLUE COLLAR OCCUPATIONS HAVE SHOWN STRONG GAINS AS WELL.

ECONOMIC GROWTH SHOULD BE THE KEYSTONE OF ECONOMIC POLICY BECAUSE IT LEADS TO GAINS IN EMPLOYMENT AND THE STANDARD OF LIVING. THE FOUNDATION OF THE CURRENT EXPANSION WAS LAID BY THE ADMINISTRATION'S POLICY OF LOWERING TAX AND REGULATORY HURDLES TO ECONOMIC GROWTH. NATURALLY I AM PLEASED THAT THE ROTH-KEMP TAX CUT PLAYED A CENTRAL ROLE. WHILE SOME MAY DOOM AND GLOOM, THE SUCCESS OF REAGAN ADMINISTRATION POLICY IS SEEN IN SUSTAINED ECONOMIC GROWTH AND 16 MILLION NEW JOBS.

Senator **Sarbanes**. Senator Proxmire.

OPENING STATEMENT OF SENATOR PROXMIRE

Senator **Proxmire**. Mr. Chairman, I would like to make a brief statement.

My good friend Bill Roth was up on the floor yesterday and I heard a very fine statement he made. I disagreed with it, but it was a very fine statement. One of the things that strikes me here is he pointed out that employment is up again. It is up by what? It is up by 29,000. Unemployment is up 170,000.

The situation that really concerns me, however, is something else. Forty percent of union contracts expired this year, I understand. Economists expected wages to rise very sharply because there is a low level of unemployment and a very high and rising level of production in many industries. You would think there would be a demand for workers and that wages would go up.

The Wall Street Journal, certainly not a liberal rag, reported a few days ago that twice as high a proportion of firms are trying to hold wage increases to below 2 percent as they were a year ago. That means for millions of workers if the increase is 2 percent or less they have a real decline in their wages. People are puzzled by how unhappy some people are with the administration. There are more jobs, but they are getting paid less.

The Wall Street Journal also reported that the majority of work stoppages fell last year to the lowest level in the 40 years the Government has kept track. Never lower. There were fewer strikes than ever, far lower wage increases, and all this occurring when unemployment is low and production breaking records. It is hard for me to understand that kind of a situation.

Let me give you two specific cases. In Eau Claire, in northwest Wisconsin, a city of about 50,000 people, their biggest employer is the Uniroyal Co., which is unionized. They employ about 3,000 or 4,000 people. This year the union agreed to a contract providing for a 63-cent-an-hour reduction in wages. Also, one less vacation week per year, three fewer annual holidays, no cost-of-living increases. In Oklahoma, the union for the Safeway workers agreed to a 20-percent cut in pay.

I am puzzled. It is true, we have an increase in jobs. People wanted jobs. That's a good sign. We also have a situation that seems to contrast what the economic situation would provide, a pressure to reduce wages and many fewer strikes than we have had in the past.

Thank you, Mr. Chairman.

Senator **Sarbanes**. Thank you, Senator Proxmire.

Senator D'Amato, do you have any comments?

Senator **D'Amato**. Thank you, Mr. Chairman.

Mr. Chairman, I am just going to ask that I might be permitted to include my written opening statement in the record as if read.

Senator **Sarbanes**. The written opening statement will be so included.

[The written opening statement of Senator D'Amato follows:]

WRITTEN OPENING STATEMENT OF SENATOR D'AMATO

MR. CHAIRMAN, I WOULD LIKE TO WELCOME DR. NORWOOD TO THE JOINT ECONOMIC COMMITTEE THIS MORNING. COMMISSIONER NORWOOD, I LOOK FORWARD TO HEARING YOUR OBSERVATIONS ON JULY'S EMPLOYMENT FIGURES.

LAST MONTH THE COMMITTEE WAS DELIGHTED WITH GOOD NEWS CONCERNING THE EMPLOYMENT SITUATION. THE UNEMPLOYMENT RATE WAS 5.3 PERCENT -- THE LOWEST FIGURE SINCE MAY 1974. THE UNEMPLOYMENT RATE DECLINED THREE-TENTHS OF A PERCENTAGE POINT FROM 5.6 PERCENT IN MAY. CIVILIAN EMPLOYMENT JUMPED BY 820,000 ON A SEASONALLY ADJUSTED BASIS TO 115.0 MILLION. THIS HEALTHY INCREASE IN CIVILIAN EMPLOYMENT MORE THAN OFFSET THE 500,000 DECREASE WE SAW BETWEEN APRIL AND MAY.

FOR THE MONTH OF JULY, THE UNEMPLOYMENT RATE OF 5.4 PERCENT REMAINED NEAR JUNE'S RATE OF 5.3%. THE NUMBER OF INDIVIDUALS EMPLOYED, AS SHOWN BY BUSINESS PAYROLLS, INCREASED BY APPROXIMATELY 285,000.

IN THE STATE OF NEW YORK, THE UNEMPLOYMENT RATE FOR THE MONTH OF JULY INCREASED FROM 3.5 PERCENT TO 4.3 PERCENT.

CLEARLY, OUR NATION'S EMPLOYMENT SITUATION CONTINUES TO LOOK PROMISING. I WAS ESPECIALLY PLEASED TO HEAR DR. NORWOOD'S REPORT LAST MONTH THAT MOST MAJOR INDUSTRY DIVISIONS EXPERIENCED JOB GROWTH AND THAT EXPORTS INCREASED.

I FOUND DR. NORWOOD'S COMMENTS ON THE NEED FOR BETTER JOB TRAINING TO BE INTERESTING. THERE IS A SHIFT IN THE ECONOMY TOWARD JOBS THAT REQUIRE A HIGHER LEVEL OF SKILL. IN ORDER TO REMAIN COMPETITIVE IN THE WORLD MARKETPLACE, WE MUST PREPARE TO MEET THE DEMANDS OF TOMORROW'S JOB MARKET.

I LOOK FORWARD TO DR. NORWOOD'S TESTIMONY THIS MORNING AND HOPE IT WILL CONTAIN ENCOURAGING EMPLOYMENT INFORMATION FOR THE MONTH OF JULY.

THANK YOU, MR. CHAIRMAN.

Senator D'AMATO. It seems to this Senator that we have come a long way in economic growth and creation of real jobs, meaningful jobs. I note with some interest that Mrs. Norwood brought up the subject last month in her report, that we are going to need higher levels of skill for many of those who seek jobs.

I have had a number of people in the educational community, Mr. Schuart of Hofstra University, for example, who pointed out an area that he is very much concerned with, that we have come about as far as we can with the various levels of service industry computerizing down, making it as easy as you can. For example, in the sale of hot dogs and hamburgers. I understand they have symbols on the machines. They hit the hot dog symbol and it rings up the price.

We might laugh at that, but the fact is we have made these skill levels achievable and we have now reached the point where we are going to have to really work in this area of job training and development, and our educational institutions are going to have to be very much more tuned in if we are going to continue to provide the economic opportunity and expansion of jobs. The jobs are there, but the skill levels are something that are very important.

I am wondering, Mr. Chairman, if Mrs. Norwood would expand on that somewhat. Just how critical will that become?

Thank you, Mr. Chairman.

Senator SARBANES. Thank you, Senator D'Amato.

Commissioner, I think we are prepared now to hear from you. I would like to congratulate you on being 1 of only 60 members of the Senior Executive Service recently presented with distinguished rank award. It is a well-deserved recognition of a career of outstanding public service. We want to recognize and acknowledge it here this morning and commend you for it.

We will be happy to hear your testimony.

STATEMENT OF HON. JANET L. NORWOOD, COMMISSIONER, BUREAU OF LABOR STATISTICS, DEPARTMENT OF LABOR, ACCOMPANIED BY THOMAS J. PLEWES, ASSOCIATE COMMISSIONER, OFFICE OF EMPLOYMENT AND UNEMPLOYMENT STATISTICS; KENNETH V. DALTON, ASSOCIATE COMMISSIONER, OFFICE OF PRICES AND LIVING CONDITIONS; AND JEROME A. MARK, ASSOCIATE COMMISSIONER, OFFICE OF PRODUCTIVITY AND TECHNOLOGY

Mrs. NORWOOD. Thank you very much.

We are always pleased to be here.

The number of nonfarm payroll jobs continued to expand in July, and unemployment remained near the June level. Both the total jobless rate including the resident Armed Forces and the civilian worker rate were 5.4 percent in July. Both rates were about half a percentage point below those of last summer.

The payroll survey continues to show a consistent pattern of strong job growth. The increase of 285,000 jobs in July followed a rise of half a million in June.

Although most of the July payroll job growth was among service-producing industries where 3 out of 4 of the Nation's nonfarm workers are employed, there was also strong growth in factory jobs.

Within the service sector, July gains were concentrated in retail and wholesale trade and in the services industry itself. Each of these industries has grown markedly over the past year. Jobs in the services industry rose by 65,000 in July and have expanded by 360,000 in just the last 3 months. Retail trade added about 80,000 jobs for the second month in a row. Employment in wholesale trade was up by 25,000; this industry has consistently added 25,000 to 30,000 jobs each month since last fall, mostly in the distribution of durable goods.

Manufacturing showed continued job strength in July, as the summer declines were much smaller than usual. After seasonal adjustment, factory employment was up by 70,000. The increase would have been even greater were it not for the absence from payrolls of about 15,000 workers in the shipbuilding and lumber industries who went out on strike. Despite some sluggishness early this year, factory jobs have increased by more than half a million over the last 12 months, with 200,000 having been added since March. Export-related industries, especially machinery, and a number of other durables industries were particularly strong in July. In addition, factory hours continued at high levels. The factory workweek and factory overtime remained at historically high levels.

Elsewhere in the goods-producing sector, the number of construction jobs rose slightly in July. The growth that continues in some components of the industry has been offset in recent months by declines among general building contractors. Jobs in mining, including oil and gas extraction, remained unchanged in July.

In contrast to the consistent pattern of job growth shown by the business survey over the past few months, the household survey has shown erratic and weaker growth in employment. Since this past February, for example, seasonally adjusted data from the household survey have shown two very large employment increases—in April and June—two large employment declines—in March and May—and 1 month (July) in which total employment was unchanged. Over the last year, employment growth averaged 200,000 a month in the household survey but 325,000 a month in the business survey.

The household survey is based on interviews of working age individuals in about 56,000 households throughout the United States, and measures the number of persons, both farm and nonfarm, self-employed as well as salaried workers, who were working or had a job during the survey week. The business survey is based on the payroll records of over 300,000 nonfarm business establishments and measures the number of jobs for which people are paid.

One reason for the more rapid employment growth in the business survey may be a possible increase in multiple job holding, which often occurs when the demand for labor is very strong. The payroll survey counts each job a person holds, but the household survey counts each person only once, regardless of the number of jobs he or she has. We have no current data on multiple job holding, but the last time we did measure it, in 1985, we found that the increase in this practice helped to explain the differences between the two surveys.

It is also possible that, because of the tight labor market in some areas of the country, some workers are moving more rapidly than in the past from one job to another. Whenever this occurs within a single pay period, the business survey counts both jobs, whereas the household survey counts the worker only once.

In spite of the disparity between the two surveys, I believe the labor market continued to show vitality. Unemployment remained near its 14-year low in July, and the business survey showed steady and widespread job gains, including substantial growth in factory jobs.

Mr. Chairman, we would be glad to try to answer any questions you may have.

[The table attached to Mrs. Norwood's statement, together with the Employment Situation press release, follows:]

Unemployment rates of all civilian workers by alternative seasonal adjustment methods

Month and year	Unadjusted rate	X-11 ARIMA method							X-11 method (official method before 1980)	Range (cols. 2-9)
		Official procedure	Concurrent (as first computed)	Concurrent (revised)	Stable	Total	Residual	12-month extrapolation		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1987										
July........	6.1	6.0	6.0	6.1	6.0	6.1	6.1	6.0	6.0	.1
August......	5.8	6.0	6.0	6.0	6.0	6.1	6.1	6.0	6.0	.1
September...	5.7	5.9	5.9	5.9	6.0	5.9	5.9	5.9	5.9	.1
October.....	5.7	6.0	6.0	6.0	6.0	5.9	6.0	6.0	6.0	.1
November....	5.6	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	-
December....	5.4	5.8	5.8	5.8	5.7	5.7	5.8	5.8	5.8	.1
1988										
January.....	6.3	5.8	5.8	5.8	5.8	5.8	5.6	5.8	5.8	.2
February....	6.2	5.7	5.7	5.7	5.8	5.7	5.6	5.7	5.8	.2
March.......	5.9	5.6	5.6	5.6	5.7	5.6	5.5	5.6	5.6	.2
April.......	5.3	5.4	5.5	5.5	5.5	5.4	5.4	5.4	5.4	.1
May.........	5.4	5.6	5.6	5.6	5.6	5.6	5.8	5.6	5.6	.2
June........	5.5	5.3	5.4	5.4	5.3	5.4	5.4	5.3	5.3	.1
July........	5.5	5.4	5.4	5.4	5.4	5.5	5.4	5.4	5.4	.1

SOURCE: U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
August 1988

(1) Unadjusted rate. Unemployment rate for all civilian workers, not seasonally adjusted.

(2) Official procedure (X-11 ARIMA method). The published seasonally adjusted rate for all civilian workers. Each of the 3 major civilian labor force components—agricultural employment, nonagricultural employment and unemployment—for 4 age-sex groups—males and females, ages 16-19 and 20 years and over—are seasonally adjusted independently using data from January 1974 forward. The data series for each of these 12 components are extended by a year at each end of the original series using ARIMA (Auto-Regressive, Integrated, Moving Average) models chosen specifically for each series. Each extended series is then seasonally adjusted with the X-11 portion of the X-11 ARIMA program. The 4 teenage unemployment and nonagricultural employment components are adjusted with the additive adjustment model, while the other components are adjusted with the multiplicative model. The unemployment rate is computed by summing the 4 seasonally adjusted unemployment components and calculating that total as a percent of the civilian labor force total derived by summing all 12 seasonally adjusted components. All the seasonally adjusted series are revised at the end of each year. Extrapolated factors for January-June are computed at the beginning of each year; extrapolated factors for July-December are computed in the middle of the year after the June data become available. Each set of 6-month factors are published in advance, in the January and July issues, respectively, of Employment and Earnings.

(3) Concurrent (as first computed, X-11 ARIMA method). The official procedure for computation of the rate for all civilian workers using the 12 components is followed except that extrapolated factors are not used at all. Each component is seasonally adjusted with the X-11 ARIMA program each month as the most recent data become available. Rates for each month of the current year are shown as first computed; they are revised only once each year, at the end of the year when data for the full year become available. For example, the rate for January 1984 would be based, during 1984, on the adjustment of data from the period January 1974 through January 1984.

(4) Concurrent (revised, X-11 ARIMA method). The procedure used is identical to (3) above, and the rate for the current month (the last month displayed) will always be the same in the two columns. However, all previous months are subject to revision each month based on the seasonal adjustment of all the components with data through the current month.

(5) Stable (X-11 ARIMA method). Each of the 12 civilian labor force components is extended using ARIMA models as in the official procedure and then run through the X-11 part of the program using the stable option. This option assumes that seasonal patterns are basically constant from year-to-year and computes final seasonal factors as unweighted averages of all the seasonal-irregular components for each month across the entire span of the period adjusted. As in the official procedure, factors are extrapolated in 6-month intervals and the series are revised at the end of each year. The procedure for computation of the rate from the seasonally adjusted components is also identical to the official procedure.

(6) Total (X-11 ARIMA method). This is one alternative aggregation procedure, in which total unemployment and civilian labor force levels are extended with ARIMA models and directly adjusted with multiplicative adjustment models in the X-11 part of the program. The rate is computed by taking seasonally adjusted total unemployment as a percent of seasonally adjusted total civilian labor force. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(7) Residual (X-11 ARIMA method). This is another alternative aggregation method, in which total civilian employment and civilian labor force levels are extended using ARIMA models and then directly adjusted with multiplicative adjustment models. The seasonally adjusted unemployment level is derived by subtracting seasonally adjusted employment from seasonally adjusted labor force. The rate is then computed by taking the derived unemployment level as a percent of the labor force level. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(8) 12-month extrapolation (X-11 ARIMA method). This approach is the same as the official procedure except that the factors are extrapolated in 12-month intervals. The factors for January-December of the current year are computed at the beginning of the year based on data through the preceding year. The values for January through June of the current year are the same as the official values since they reflect the same factors.

(9) X-11 method (official method before 1980). The method for computation of the official procedure is used except that the series are not extended with ARIMA models and the factors are projected in 12-month intervals. The standard X-11 program is used to perform the seasonal adjustment.

Methods of Adjustment: The X-11 ARIMA method was developed at Statistics Canada by the Seasonal Adjustment and Times Series Staff under the direction of Estela Bee Dagum. The method is described in The X-11 ARIMA Seasonal Adjustment Method, by Estela Bee Dagum, Statistics Canada Catalogue No. 12-564E, February 1980.

The standard X-11 method is described in X-11 Variant of the Census Method II Seasonal Adjustment Program, by Julius Shiskin, Allan Young and John Musgrave (Technical Paper No. 15, Bureau of the Census, 1967).

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THE EMPLOYMENT SITUATION: JULY 1988

Payroll employment continued to increase in July and unemployment was little changed, the Bureau of Labor Statistics of the U. S. Department of Labor reported today. Both the overall and the civilian worker jobless rates were 5.4 percent.

Nonagricultural payroll employment, as measured by the survey of business establishments, rose by 285,000 in July, seasonally adjusted. By contrast, total civilian employment, as measured by the household survey, was about unchanged, after increasing by an unusually large amount in June.

Unemployment (Household Survey Data)

The number of unemployed persons in July totaled 6.6 million, seasonally adjusted, and the unemployment rate for civilian workers was 5.4 percent. Both figures were little changed from June. Since July of last year, the number of unemployed persons has fallen by 630,000, and the jobless rate has declined six-tenths of a percentage point.

A large part of the over-the-year improvement in unemployment occurred among adult men. Their jobless rate for July (4.5 percent) and that for adult women (5.1 percent) were essentially unchanged, while the rate for teenagers rose by 1.6 percentage points to 15.2 percent, near its May level. The rates for whites (4.7 percent) and blacks (11.4 percent)--including black teenagers (31.1 percent)--were little changed from June. The rate for Hispanics fell to 8.0 percent. (See tables A-2 and A-3.)

Civilian Employment and the Labor Force (Household Survey Data)

Civilian employment was essentially unchanged at 115.1 million in July, following large swings in recent months. The employment-population ratio held at a high of 62.3 percent. The civilian labor force edged upward by 210,000 in July to 121.7 million. This was 1.8 million above the July 1987 level. (See table A-2.)

Industry Payroll Employment (Establishment Survey Data)

Employment in nonagricultural establishments rose by 285,000 in July. This increase, coupled with a substantial upward revision of the preliminary June estimates, brought the number of payroll jobs to 106.3 million, seasonally adjusted. Strong gains occurred in manufacturing and several industries in the service-producing sector. (See table B-1.)

Table A. Major indicators of labor market activity, seasonally adjusted

Category	Quarterly averages 1988 I	Quarterly averages 1988 II	Monthly data 1988 May	Monthly data 1988 June	Monthly data 1988 July	June-July change
HOUSEHOLD DATA						
	Thousands of persons					
Labor force 1/	122,882	122,968	122,692	123,157	123,357	200
Total employment 1/	115,954	116,352	115,909	116,703	116,732	29
Civilian labor force	121,142	121,258	120,978	121,472	121,684	212
Civilian employment	114,214	114,642	114,195	115,018	115,059	41
Unemployment	6,928	6,616	6,783	6,455	6,625	170
Not in labor force	62,825	63,131	63,396	63,090	63,045	-45
Discouraged workers	1,027	910	N.A.	N.A.	N.A.	N.A.
	Percent of labor force					
Unemployment rates:						
All workers 1/	5.6	5.4	5.5	5.2	5.4	0.2
All civilian workers	5.7	5.5	5.6	5.3	5.4	.1
Adult men	5.0	4.7	4.9	4.6	4.5	-.1
Adult women	5.0	4.9	4.9	4.9	5.1	.2
Teenagers	16.0	15.0	15.6	13.6	15.2	1.6
White	4.8	4.6	4.7	4.5	4.7	.2
Black	12.5	12.0	12.4	11.5	11.4	-.1
Hispanic origin	7.9	9.1	9.0	9.0	8.0	-1.0
ESTABLISHMENT DATA						
	Thousands of jobs					
Nonfarm employment	104,670	p105,597	105,489	p106,021	p106,304	p283
Goods-producing	25,260	p25,497	25,466	p25,590	p25,672	p82
Service-producing	79,410	p80,100	80,023	p80,431	p80,632	p201
	Hours of work					
Average weekly hours:						
Total private	34.7	p34.8	34.7	p34.7	p34.9	p0.2
Manufacturing	41.0	p41.1	41.0	p41.1	p41.1	p0
Overtime	3.8	p3.9	3.9	p3.9	p3.9	p0

1/ Includes the resident Armed Forces. N.A.=not available.
p=preliminary.

Manufacturing continued to display vigorous employment growth, as the number of factory jobs rose by 70,000 to reach 19.6 million. As in the previous month, most of this increase was in durable goods manufacturing, especially machinery. Elsewhere in the goods sector, employment in construction rose very slightly in July, after increasing by 70,000 in June. While jobs in general building contracting have shown little strength this summer, there have been strong gains in the special trades (plumbing, electrical, masonry, etc.).

Employment in the service-producing sector rose by about 200,000 in July. Retail trade gained 80,000 jobs, equaling June's strong growth; recent increases have been widespread throughout the industry, except for general merchandise stores. Employment in the fast-growing services division was up by a relatively modest 65,000 in July but has gained about 360,000 jobs since April. Wholesale trade continued to exhibit strong job growth with an increase of 25,000, entirely in durable goods distribution.

Weekly Hours (Establishment Survey Data)

The average workweek for production or nonsupervisory workers on private nonagricultural payrolls rose by 0.2 hour to 34.9 hours in July, seasonally adjusted. While the factory workweek and overtime were unchanged at 41.1 and 3.9 hours, respectively, they remained very high by historical standards. (See table B-2.)

The index of aggregate weekly hours of production or nonsupervisory workers on private nonagricultural payrolls, at 126.3 (1977=100), rose by 0.7 percent, seasonally adjusted. The index for manufacturing rose by 0.6 percent to 96.7. (See table B-5.)

Hourly and Weekly Earnings (Establishment Survey Data)

Average hourly earnings of private production or nonsupervisory workers rose 0.4 percent in July to $9.32, seasonally adjusted, and average weekly earnings rose by 1.0 percent, reflecting the increases in hourly earnings and in the length of the workweek. Prior to seasonal adjustment, average hourly earnings rose by 2 cents to $9.25, and average weekly earnings increased by $1.63 to $324.68. (See table B-3.)

The Hourly Earnings Index (Establishment Survey Data)

The Hourly Earnings Index (HEI) was 178.9 (1977=100) in July, seasonally adjusted, an increase of 0.5 percent from June. For the 12 months ended in July, the increase was 3.6 percent. In dollars of constant purchasing power, the HEI decreased 0.5 percent during the 12-month period ending in June. The HEI is computed so as to exclude the effects of two types of changes unrelated to underlying wage rate movements--fluctuations in manufacturing overtime and interindustry employment shifts. (See table B-4.)

Beginning in 1989, the Hourly Earnings Index will no longer be published in this release. For further information, see "Employment Cost Index Series to Replace Hourly Earnings Index," Monthly Labor Review, July 1988, pp. 32-34. ECI data are currently published quarterly in a news release, in the Monthly Labor Review, and in Current Wage Developments.

The Employment Situation for August 1988 will be released on Friday, September 2, at 8:30 A.M. (EDT).

Explanatory Note

This news release presents statistics from two major surveys, the Current Population Survey (household survey) and the Current Employment Statistics Survey (establishment survey). The household survey provides the information on the labor force, total employment, and unemployment that appears in the A tables, marked HOUSEHOLD DATA. It is a sample survey of about 55,800 households that is conducted by the Bureau of the Census with most of the findings analyzed and published by the Bureau of Labor Statistics (BLS).

The establishment survey provides the information on the employment, hours, and earnings of workers on nonagricultural payrolls that appears in the B tables, marked ESTABLISHMENT DATA. This information is collected from payroll records by BLS in cooperation with State agencies. The sample includes over 300,000 establishments employing over 38 million people.

For both surveys, the data for a given month are actually collected for and relate to a particular week. In the household survey, unless otherwise indicated, it is the calendar week that contains the 12th day of the month, which is called the survey week. In the establishment survey, the reference week is the pay period including the 12th, which may or may not correspond directly to the calendar week.

The data in this release are affected by a number of technical factors, including definitions, survey differences, seasonal adjustments, and the inevitable variance in results between a survey of a sample and a census of the entire population. Each of these factors is explained below.

Coverage, definitions, and differences between surveys

The sample households in the household survey are selected so as to reflect the entire civilian noninstitutional population 16 years of age and older. Each person in a household is classified as employed, unemployed, or not in the labor force. Those who hold more than one job are classified according to the job at which they worked the most hours.

People are classified as *employed* if they did any work at all as paid civilians; worked in their own business or profession or on their own farm; or worked 15 hours or more in an enterprise operated by a member of their family, whether they were paid or not. People are also counted as employed if they were on unpaid leave because of illness, bad weather, disputes between labor and management, or personal reasons. Members of the Armed Forces stationed in the United States are also included in the employed total.

People are classified as *unemployed*, regardless of their eligibility for unemployment benefits or public assistance, if they meet all of the following criteria: They had no employment during the survey week; they were available for work at that time; and they made specific efforts to find employment sometime during the prior 4 weeks. Persons laid off from their former jobs and awaiting recall and those expecting to report to a job within 30 days need not be looking for work to be counted as unemployed.

The *labor force* equals the sum of the number employed and the number unemployed. The *unemployment rate* is the percentage of unemployed people in the labor force (civilian plus the resident Armed Forces). Table A-5 presents a special grouping of seven measures of unemployment based on varying definitions of unemployment and the labor force. The definitions are provided in the table. The most restrictive definition yields U-1 and the most comprehensive yields U-7. The overall unemployment rate is U-5a, while U-5b represents the same measure with a civilian labor force base.

Unlike the household survey, the establishment survey only counts wage and salary employees whose names appear on the payroll records of nonagricultural firms. As a result, there are many differences between the two surveys, among which are the following:

— The household survey, although based on a smaller sample, reflects a larger segment of the population; the establishment survey excludes agriculture, the self-employed, unpaid family workers, private household workers, and members of the resident Armed Forces;

— The household survey includes people on unpaid leave among the employed; the establishment survey does not;

— The household survey is limited to those 16 years of age and older; the establishment survey is not limited by age;

— The household survey has no duplication of individuals, because each individual is counted only once; in the establishment survey, employees working at more than one job or otherwise appearing on more than one payroll would be counted separately for each appearance.

Other differences between the two surveys are described in "Comparing Employment Estimates from Household and Payroll Surveys," which may be obtained from the BLS upon request.

Seasonal adjustment

Over the course of a year, the size of the Nation's labor force and the levels of employment and unemployment undergo sharp fluctuations due to such seasonal events as changes in weather, reduced or expanded production, harvests, major holidays, and the opening and closing of schools. For example, the labor force increases by a large number each June, when schools close and many young people enter the job market. The effect of such seasonal variation can be very large; over the course of a year, for example, seasonality may account for as much as 95 percent of the month-to-month changes in unemployment.

Because these seasonal events follow a more or less regular pattern each year, their influence on statistical trends can be eliminated by adjusting the statistics from month to month. These adjustments make nonseasonal developments, such as declines in economic activity or increases in the participation of women in the labor force, easier to spot. To return to the school's-out example, the large number of people entering the labor force each June is likely to obscure any other changes that have taken place since May, making it difficult to determine if the level of economic activity has risen or declined. However, because the effect of students finishing school in previous years is known, the statistics for the current year can be adjusted to allow for a comparable change. Insofar as the seasonal adjustment is made correctly, the adjusted figure provides a more useful tool with which to analyze changes in economic activity.

Measures of labor force, employment, and unemployment contain components such as age and sex. Statistics for all employees, production workers, average weekly hours, and average hourly earnings include components based on the employer's industry. All these statistics can be seasonally adjusted either by adjusting the total or by adjusting each of the components and combining them. The second procedure usually yields more accurate information and is therefore followed by BLS. For example, the seasonally adjusted figure for the labor force is the sum of eight seasonally adjusted civilian employment components, plus the resident Armed Forces total (not adjusted for seasonality), and four seasonally adjusted unemployment components; the total for unemployment is the sum of the four unemployment components; and the overall unemployment rate is derived by dividing the resulting estimate of total unemployment by the estimate of the labor force.

The numerical factors used to make the seasonal adjustments are recalculated regularly. For the household survey, the factors are calculated for the January-June period and again for the July-December period. The January revision is applied to data that have been published over the previous 5 years. For the establishment survey, updated factors for seasonal adjustment are calculated only once a year, along with the introduction of new benchmarks which are discussed at the end of the next section.

Sampling variability

Statistics based on the household and establishment surveys are subject to sampling error, that is, the estimate of the number of people employed and the other estimates drawn from these surveys probably differ from the figures that would be obtained from a complete census, even if the same questionnaires and procedures were used. In the household survey, the amount of the differences can be expressed in terms of standard errors. The numerical value of a standard error depends upon the size of the sample, the results of the survey, and other factors. However, the numerical value is always such that the chances are approximately 68 out of 100 that an estimate based on the sample will differ by no more than the standard error from the results of a complete census. The chances are approximately 90 out of 100 that an estimate based on the sample will differ by no more than 1.6 times the standard error from the results of a complete census. At approximately the 90-percent level of confidence—the confidence limits used by BLS in its analyses—the error for the monthly change in total employment is on the order of plus or minus 358,000; for total unemployment it is 224,000; and, for the overall unemployment rate, it is 0.19 percentage point. These figures do not mean that the sample results are off by these magnitudes but, rather, that the chances are approximately 90 out of 100 that the "true" level or rate would not be expected to differ from the estimates by more than these amounts.

Sampling errors for monthly surveys are reduced when the data are cumulated for several months, such as quarterly or annually. Also, as a general rule, the smaller the estimate, the larger the sampling error. Therefore, relatively speaking, the estimate of the size of the labor force is subject to less error than is the estimate of the number unemployed. And, among the unemployed, the sampling error for the jobless rate of adult men, for example, is much smaller than is the error for the jobless rate of teenagers. Specifically, the error on monthly change in the jobless rate for men is .25 percentage point; for teenagers, it is 1.29 percentage points.

In the establishment survey, estimates for the 2 most current months are based on incomplete returns; for this reason, these estimates are labeled preliminary in the tables. When all the returns in the sample have been received, the estimates are revised. In other words, data for the month of September are published in preliminary form in October and November and in final form in December. To remove errors that build up over time, a comprehensive count of the employed is conducted each year. The results of this survey are used to establish new benchmarks—comprehensive counts of employment—against which month-to-month changes can be measured. The new benchmarks also incorporate changes in the classification of industries and allow for the formation of new establishments.

Additional statistics and other information

In order to provide a broad view of the Nation's employment situation, BLS regularly publishes a wide variety of data in this news release. More comprehensive statistics are contained in *Employment and Earnings*, published each month by BLS. It is available for $8.50 per issue or $22.00 per year from the U.S. Government Printing Office, Washington, DC 20204. A check or money order made out to the Superintendent of Documents must accompany all orders.

Employment and Earnings also provides approximations of the standard errors for the household survey data published in this release. For unemployment and other labor force categories, the standard errors appear in tables B through J of its "Explanatory Notes." Measures of the reliability of the data drawn from the establishment survey and the actual amounts of revision due to benchmark adjustments are provided in tables M, O, P, and Q of that publication.

Table A-1. Employment status of the population, including Armed Forces in the United States, by sex

(Numbers in thousands)

Employment status and sex	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
TOTAL									
Noninstitutional population[2]	184,605	186,247	186,402	184,605	185,847	185,964	186,088	186,247	186,402
Labor force[2]	123,825	124,713	125,561	121,610	122,639	123,055	122,692	123,157	123,357
Participation rate[3]	67.1	67.0	67.4	65.9	66.0	66.2	65.9	66.1	66.2
Total employed[2]	116,372	117,894	118,739	114,359	115,839	116,445	115,909	116,703	116,732
Employment-population ratio[4]	63.0	63.3	63.7	61.9	62.3	62.6	62.3	62.7	62.6
Resident Armed Forces	1,720	1,685	1,673	1,720	1,736	1,732	1,714	1,685	1,673
Civilian employed	114,652	116,209	117,066	112,639	114,103	114,713	114,195	115,018	115,059
Agriculture	3,754	3,546	3,541	3,212	3,204	3,228	3,035	3,085	3,046
Nonagricultural industries	110,898	112,663	113,524	109,427	110,899	111,485	111,160	111,933	112,014
Unemployed	7,453	6,819	6,823	7,251	6,801	6,610	6,783	6,455	6,625
Unemployment rate[5]	6.0	5.5	5.4	6.0	5.5	5.4	5.5	5.2	5.4
Not in labor force	60,779	61,534	60,841	62,995	63,208	62,909	63,396	63,090	63,045
Men, 16 years and over									
Noninstitutional population[2]	88,534	89,367	89,445	88,534	89,168	89,225	89,287	89,367	89,445
Labor force[2]	69,338	69,624	70,205	67,671	68,148	68,445	68,318	68,429	68,521
Participation rate[3]	78.3	77.9	78.5	76.4	76.4	76.7	76.5	76.6	76.6
Total employed[2]	65,375	65,996	66,676	63,711	64,332	64,892	64,583	64,934	65,002
Employment-population ratio[4]	73.8	73.8	74.5	72.0	72.1	72.7	72.3	72.7	72.7
Resident Armed Forces	1,561	1,523	1,512	1,561	1,573	1,569	1,553	1,523	1,512
Civilian employed	63,814	64,473	65,164	62,150	62,759	63,323	63,030	63,411	63,490
Unemployed	3,963	3,628	3,529	3,960	3,816	3,553	3,736	3,495	3,519
Unemployment rate[5]	5.7	5.2	5.0	5.9	5.6	5.2	5.5	5.1	5.1
Women, 16 years and over									
Noninstitutional population[2]	96,071	96,880	96,957	96,071	96,679	96,739	96,801	96,880	96,957
Labor force[2]	54,488	55,089	55,356	53,939	54,491	54,610	54,374	54,728	54,836
Participation rate[3]	56.7	56.9	57.1	56.1	56.4	56.5	56.2	56.5	56.6
Total employed[2]	50,998	51,898	52,063	50,648	51,507	51,553	51,327	51,769	51,730
Employment-population ratio[4]	53.1	53.6	53.7	52.7	53.3	53.3	53.0	53.4	53.4
Resident Armed Forces	159	162	161	159	163	163	161	162	161
Civilian employed	50,839	51,736	51,902	50,489	51,344	51,390	51,166	51,607	51,569
Unemployed	3,490	3,191	3,294	3,291	2,985	3,057	3,047	2,960	3,106
Unemployment rate[5]	6.4	5.8	6.0	6.1	5.5	5.6	5.6	5.4	5.7

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[1] The population and Armed Forces figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Includes members of the Armed Forces stationed in the United States.

[3] Labor force as a percent of the noninstitutional population.

[4] Total employment as a percent of the noninstitutional population.

[5] Unemployment as a percent of the labor force (including the resident Armed Forces).

Table A-2. Employment status of the civilian population by sex and age

(Numbers in thousands)

Employment status, sex, and age	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
TOTAL									
Civilian noninstitutional population	182,885	184,562	184,729	182,885	184,111	184,232	184,374	184,562	184,729
Civilian labor force	122,105	123,028	123,888	119,890	120,903	121,323	120,978	121,472	121,684
Participation rate	66.8	66.7	67.1	65.6	65.7	65.9	65.6	65.8	65.9
Employed	114,652	116,209	117,066	112,639	114,103	114,713	114,195	115,018	115,059
Employment-population ratio[2]	62.7	63.0	63.4	61.6	62.0	62.3	61.9	62.3	62.3
Unemployed	7,453	6,819	6,823	7,251	6,801	6,610	6,783	6,455	6,625
Unemployment rate	6.1	5.5	5.5	6.0	5.6	5.4	5.6	5.3	5.4
Men, 20 years and over									
Civilian noninstitutional population	79,625	80,526	80,608	79,625	80,260	80,326	80,402	80,526	80,608
Civilian labor force	62,645	63,134	63,320	62,106	62,497	62,791	62,662	62,667	62,769
Participation rate	78.7	78.4	78.6	78.0	77.9	78.2	77.9	77.8	77.9
Employed	59,458	60,350	60,622	58,783	59,407	59,883	59,590	59,797	59,954
Employment-population ratio[2]	74.7	74.9	75.2	73.8	74.0	74.5	74.1	74.3	74.4
Agriculture	2,556	2,416	2,454	2,333	2,253	2,255	2,181	2,208	2,247
Nonagricultural industries	56,902	57,934	58,168	56,450	57,154	57,627	57,409	57,588	57,706
Unemployed	3,187	2,784	2,697	3,323	3,089	2,909	3,072	2,870	2,815
Unemployment rate	5.1	4.4	4.3	5.4	4.9	4.6	4.9	4.6	4.5
Women, 20 years and over									
Civilian noninstitutional population	88,632	89,502	89,588	88,632	89,261	89,307	89,382	89,502	89,588
Civilian labor force	49,564	50,420	50,426	49,886	50,542	50,612	50,441	50,642	50,775
Participation rate	55.9	56.3	56.3	56.3	56.6	56.7	56.4	56.6	56.7
Employed	46,811	47,972	47,783	47,206	48,132	48,170	47,960	48,169	48,199
Employment-population ratio[2]	52.8	53.6	53.3	53.3	53.9	53.9	53.7	53.8	53.8
Agriculture	749	704	650	620	656	692	587	616	542
Nonagricultural industries	46,062	47,268	47,133	46,586	47,476	47,478	47,373	47,553	47,657
Unemployed	2,753	2,448	2,643	2,680	2,411	2,442	2,481	2,473	2,576
Unemployment rate	5.6	4.9	5.2	5.4	4.8	4.8	4.9	4.9	5.1
Both sexes, 16 to 19 years									
Civilian noninstitutional population	14,628	14,534	14,533	14,628	14,591	14,598	14,590	14,534	14,533
Civilian labor force	9,896	9,474	10,143	7,898	7,865	7,919	7,875	8,163	8,141
Participation rate	67.6	65.2	69.8	54.0	53.9	54.2	54.0	56.2	56.0
Employed	8,383	7,887	8,661	6,650	6,564	6,660	6,645	7,051	6,907
Employment-population ratio[2]	57.3	54.3	59.6	45.5	45.0	45.6	45.5	48.5	47.5
Agriculture	448	425	438	259	295	280	267	260	257
Nonagricultural industries	7,934	7,461	8,223	6,391	6,269	6,380	6,378	6,791	6,650
Unemployed	1,513	1,588	1,482	1,248	1,301	1,259	1,230	1,112	1,234
Unemployment rate	15.3	16.8	14.6	15.8	16.5	15.9	15.6	13.6	15.2

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[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
WHITE									
Civilian noninstitutional population	157,058	158,166	158,279	157,058	157,868	157,943	158,034	158,166	158,279
Civilian labor force	104,987	106,015	106,381	103,248	104,171	104,574	104,209	104,691	104,603
Participation rate	66.8	67.0	67.2	65.7	66.0	66.2	65.9	66.2	66.1
Employed	99,609	101,069	101,432	97,917	99,274	99,751	99,297	99,932	99,725
Employment-population ratio[2]	63.4	63.9	64.1	62.3	62.9	63.2	62.8	63.2	63.0
Unemployed	5,378	4,946	4,949	5,331	4,897	4,824	4,913	4,759	4,878
Unemployment rate	5.1	4.7	4.7	5.2	4.7	4.6	4.7	4.5	4.7
Men, 20 years and over									
Civilian labor force	54,625	55,085	55,196	54,198	54,522	54,699	54,618	54,662	54,732
Participation rate	78.9	78.8	78.9	78.3	78.2	78.5	78.3	78.2	78.3
Employed	52,250	53,016	53,182	51,670	52,245	52,538	52,314	52,491	52,603
Employment-population ratio[2]	75.5	75.9	76.1	74.7	75.0	75.4	75.0	75.1	75.2
Unemployed	2,375	2,069	2,014	2,528	2,277	2,161	2,304	2,171	2,129
Unemployment rate	4.3	3.8	3.6	4.7	4.2	4.0	4.2	4.0	3.9
Women, 20 years and over									
Civilian labor force	41,927	42,742	42,568	42,241	42,841	42,986	42,827	42,921	42,887
Participation rate	55.3	55.9	55.7	55.7	56.2	56.3	56.1	56.2	56.1
Employed	39,975	41,018	40,671	40,343	41,183	41,297	41,104	41,183	41,040
Employment-population ratio[2]	52.7	53.7	53.2	53.2	54.0	54.1	53.8	53.9	53.7
Unemployed	1,951	1,724	1,897	1,898	1,658	1,689	1,723	1,738	1,847
Unemployment rate	4.7	4.0	4.5	4.5	3.9	3.9	4.0	4.0	4.3
Both sexes, 16 to 19 years									
Civilian labor force	8,436	8,188	8,617	6,809	6,807	6,889	6,764	7,108	6,983
Participation rate	70.5	69.0	72.6	56.9	57.2	58.0	57.0	59.9	58.9
Employed	7,384	7,034	7,579	5,904	5,845	5,916	5,879	6,258	6,081
Employment-population ratio[2]	61.7	59.3	63.9	49.3	49.1	49.8	49.5	52.7	51.3
Unemployed	1,051	1,154	1,038	905	962	973	885	850	902
Unemployment rate	12.5	14.1	12.0	13.3	14.1	14.1	13.1	12.0	12.9
Men	12.1	14.2	12.9	13.5	15.7	14.5	13.8	12.8	14.6
Women	12.8	13.9	11.1	13.1	12.4	13.7	12.4	11.1	11.1
BLACK									
Civilian noninstitutional population	20,373	20,683	20,715	20,373	20,596	20,622	20,650	20,683	20,715
Civilian labor force	13,468	13,231	13,700	13,039	13,098	13,078	13,069	12,989	13,293
Participation rate	66.1	64.0	66.1	64.0	63.6	63.4	63.3	62.8	64.2
Employed	11,645	11,597	12,031	11,381	11,420	11,482	11,452	11,489	11,774
Employment-population ratio[2]	57.2	56.1	58.1	55.9	55.4	55.7	55.5	55.5	56.8
Unemployed	1,823	1,634	1,669	1,658	1,678	1,597	1,617	1,500	1,519
Unemployment rate	13.5	12.4	12.2	12.7	12.8	12.2	12.4	11.5	11.4
Men, 20 years and over									
Civilian labor force	6,159	6,128	6,161	6,061	6,127	6,163	6,107	6,064	6,070
Participation rate	76.3	74.6	74.9	75.1	75.0	75.3	74.5	73.8	73.8
Employed	5,463	5,518	5,569	5,384	5,429	5,511	5,449	5,458	5,492
Employment-population ratio[2]	67.7	67.2	67.7	66.7	66.4	67.3	66.5	66.5	66.8
Unemployed	696	610	592	677	699	652	658	606	578
Unemployment rate	11.3	10.0	9.6	11.2	11.4	10.6	10.8	10.0	9.5
Women, 20 years and over									
Civilian labor force	6,104	6,043	6,284	6,116	6,136	6,093	6,059	6,074	6,307
Participation rate	60.2	58.7	61.0	60.4	59.9	59.4	59.0	59.0	61.2
Employed	5,388	5,405	5,616	5,417	5,465	5,407	5,414	5,421	5,650
Employment-population ratio[2]	53.2	52.5	54.5	53.5	53.3	52.7	52.7	52.7	54.8
Unemployed	716	638	668	699	671	686	645	652	657
Unemployment rate	11.7	10.6	10.6	11.4	10.9	11.3	10.6	10.7	10.4
Both sexes, 16 to 19 years									
Civilian labor force	1,205	1,061	1,254	862	834	822	903	852	917
Participation rate	55.6	48.6	57.4	39.8	38.3	37.7	41.4	39.0	42.0
Employed	794	673	846	580	526	564	589	610	632
Employment-population ratio[2]	36.6	30.8	38.7	26.8	24.2	25.9	27.0	28.0	28.9
Unemployed	411	387	409	282	308	258	314	242	285
Unemployment rate	34.1	36.5	32.6	32.7	36.9	31.4	34.8	28.4	31.1
Men	33.9	35.1	32.3	32.4	39.0	27.6	33.3	30.4	30.4
Women	34.3	38.2	32.9	33.1	35.0	35.5	36.6	25.9	31.8

See footnotes at end of table.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin—Continued

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
HISPANIC ORIGIN									
Civilian noninstitutional population	12,887	13,306	13,344	12,887	13,192	13,230	13,268	13,306	13,344
Civilian labor force	8,583	9,132	9,133	8,447	8,803	8,828	8,859	9,027	8,984
Participation rate	66.6	68.6	68.4	65.5	66.7	66.7	66.8	67.8	67.3
Employed	7,883	8,334	8,396	7,762	8,079	[illegible]	8,058	8,219	8,264
Employment-population ratio[2]	61.2	62.6	62.9	60.2	61.2	60.5	60.7	61.8	61.9
Unemployed	700	798	737	685	724	818	801	809	720
Unemployment rate	8.2	8.7	8.1	8.1	8.2	9.3	9.0	9.0	8.0

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

Table A-4. Selected employment indicators

(In thousands)

Category	Not seasonally adjusted			Seasonally adjusted					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
CHARACTERISTIC									
Civilian employed, 16 years and over	114,652	116,209	117,066	112,639	114,103	114,713	114,195	115,018	115,059
Married men, spouse present	40,402	40,606	40,657	40,262	40,481	40,459	40,267	40,485	40,535
Married women, spouse present	27,744	28,426	28,138	28,283	28,805	28,859	28,567	28,713	28,654
Women who maintain families	6,031	6,055	6,127	6,033	6,160	6,055	5,957	6,085	6,145
MAJOR INDUSTRY AND CLASS OF WORKER									
Agriculture:									
Wage and salary workers	1,967	1,862	1,853	1,625	1,648	1,678	1,526	1,562	1,539
Self-employed workers	1,572	1,466	1,482	1,424	1,423	1,385	1,346	1,359	1,346
Unpaid family workers	215	217	207	153	142	155	159	167	148
Nonagricultural industries:									
Wage and salary workers	102,350	103,780	104,659	100,825	102,279	102,538	101,927	103,000	103,133
Government	16,355	16,672	16,433	16,876	16,908	17,015	16,887	17,064	16,959
Private industries	85,996	87,108	88,226	83,949	85,371	85,523	85,040	85,935	86,174
Private households	1,353	1,227	1,251	1,212	1,175	1,092	1,156	1,150	1,123
Other industries	84,643	85,881	86,975	82,737	84,196	84,431	83,884	84,786	85,051
Self-employed workers	8,279	8,568	8,605	8,216	8,366	8,637	8,917	8,577	8,528
Unpaid family workers	269	315	259	266	248	281	307	301	255
PERSONS AT WORK PART TIME[1]									
All industries:									
Part time for economic reasons	6,219	5,785	6,141	5,428	5,343	5,194	4,844	5,317	5,382
Slack work	2,387	2,251	2,450	2,429	2,520	2,236	2,227	2,364	2,490
Could only find part-time work	3,452	3,059	3,309	2,683	2,535	2,502	2,315	2,637	2,581
Voluntary part time	11,826	13,013	12,357	14,437	14,603	15,016	14,790	14,507	15,070
Nonagricultural industries:									
Part time for economic reasons	5,848	5,492	5,869	5,154	5,106	4,924	4,623	5,076	5,185
Slack work	2,203	2,098	2,292	2,261	2,325	2,121	2,120	2,199	2,351
Could only find part-time work	3,290	2,935	3,214	2,599	2,475	2,397	2,236	2,566	2,545
Voluntary part time	11,324	12,520	11,911	13,953	14,141	14,592	14,338	14,083	14,869

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial dispute.

Table A-5. Range of unemployment measures based on varying definitions of unemployment and the labor force, seasonally adjusted

(Percent)

Measure	Quarterly averages					Monthly data		
	1987			1988		1988		
	II	III	IV	I	II	May	June	July
U-1 Persons unemployed 15 weeks or longer as a percent of the civilian labor force	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.3
U-2 Job losers as a percent of the civilian labor force	3.0	2.8	2.7	2.6	2.5	2.7	2.5	2.5
U-3 Unemployed persons 25 years and over as a percent of the civilian labor force	4.8	4.6	4.5	4.4	4.2	4.3	4.1	4.2
U-4 Unemployed full-time jobseekers as a percent of the full-time civilian labor force	5.9	5.6	5.5	5.4	5.1	5.2	4.9	5.0
U-5a Total unemployed as a percent of the labor force, including the resident Armed Forces	6.2	5.9	5.8	5.6	5.4	5.5	5.2	5.4
U-5b Total unemployed as a percent of the civilian labor force	6.3	6.0	5.9	5.7	5.5	5.6	5.3	5.4
U-6 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons as a percent of the civilian labor force less 1/2 of the part-time labor force	8.5	8.2	8.1	8.0	7.6	7.6	7.5	7.6
U-7 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons plus discouraged workers as a percent of the civilian labor force plus discouraged workers less 1/2 of the part-time labor force	9.3	9.0	8.8	8.8	8.3	N.A.	N.A.	N.A.

N.A. = not available.

Table A-6. Selected unemployment indicators, seasonally adjusted

Category	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
CHARACTERISTIC									
Total, 16 years and over	7,251	6,455	6,625	6.0	5.6	5.4	5.6	5.3	5.4
Men, 16 years and over	3,960	3,495	3,519	6.0	5.7	5.3	5.6	5.2	5.3
Men, 20 years and over	3,323	2,870	2,815	5.4	4.9	4.6	4.9	4.6	4.5
Women, 16 years and over	3,291	2,960	3,106	6.1	5.5	5.6	5.6	5.4	5.7
Women, 20 years and over	2,680	2,473	2,576	5.4	4.8	4.8	4.9	4.9	5.1
Both sexes, 16 to 19 years	1,248	1,112	1,234	15.8	16.5	15.9	15.6	13.6	15.2
Married men, spouse present	1,611	1,311	1,268	3.8	3.4	3.0	3.3	3.1	3.0
Married women, spouse present	1,240	1,117	1,212	4.2	4.0	3.8	3.9	3.7	4.1
Women who maintain families	620	515	577	9.3	7.5	8.7	8.4	7.8	8.6
Full-time workers	5,852	5,111	5,174	5.7	5.3	5.1	5.2	4.9	5.0
Part-time workers	1,393	1,345	1,443	8.1	7.7	7.4	7.7	7.8	8.1
Labor force time lost[2]	—	—	—	6.9	6.5	6.2	6.4	6.3	6.4
INDUSTRY									
Nonagricultural private wage and salary workers	5,454	4,878	4,955	6.1	5.6	5.3	5.7	5.4	5.4
Goods-producing industries	2,037	1,758	1,833	7.1	6.5	6.5	6.6	6.0	6.3
Mining	68	51	42	7.9	7.9	8.4	10.4	6.7	5.3
Construction	674	654	630	10.8	10.7	10.6	10.5	10.2	10.2
Manufacturing	1,295	1,054	1,161	6.0	5.2	5.3	5.4	4.8	5.2
Durable goods	773	569	657	6.0	5.2	4.8	4.9	4.4	5.0
Nondurable goods	522	485	504	5.9	5.3	6.0	6.0	5.4	5.6
Service-producing industries	3,417	3.120	3,122	5.6	5.2	4.7	5.2	5.1	5.0
Transportation and public utitities	276	273	223	4.4	4.2	3.8	4.4	4.1	3.5
Wholesale and retail trade	1,548	1,351	1,415	6.8	6.8	5.9	6.3	5.9	6.2
Finance and service industries	1,593	1,497	1,484	5.1	4.2	4.1	4.6	4.6	4.5
Government workers	601	499	538	3.4	2.8	3.0	2.9	2.8	3.1
Agricultural wage and salary workers	198	168	186	10.9	11.0	10.6	13.9	9.7	10.8

[1] Unemployment as a percent of the civilian labor force.

[2] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

Table A-7. Duration of unemployment

(Numbers in thousands)

Weeks of unemployment	Not seasonally adjusted			Seasonally adjusted					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
DURATION									
Less than 5 weeks	3,415	3,661	3,164	3,186	3,009	3,125	3,075	3,066	2,965
5 to 14 weeks	2,276	1,631	2,186	2,144	2,101	1,956	2,110	1,890	2,078
15 weeks and over	1,762	1,527	1,473	1,920	1,722	1,540	1,609	1,512	1,629
15 to 26 weeks	787	732	685	945	887	725	784	727	838
27 weeks and over	975	795	788	975	835	816	825	785	791
Average (mean) duration, in weeks	13.4	12.5	12.7	14.2	13.7	13.4	13.8	12.9	13.6
Median duration, in weeks	5.9	4.7	5.6	6.6	6.6	5.6	5.9	6.0	6.3
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 5 weeks	45.8	53.7	46.4	43.9	44.0	47.2	45.3	47.4	44.4
5 to 14 weeks	30.5	23.9	32.0	29.6	30.8	29.5	31.1	29.2	31.1
15 weeks and over	23.6	22.4	21.6	26.5	25.2	23.3	23.7	23.4	24.4
15 to 26 weeks	10.6	10.7	10.0	13.0	13.0	10.9	11.5	11.2	12.6
27 weeks and over	13.1	11.7	11.5	13.4	12.2	12.3	12.1	12.1	11.9

Table A-8. Reason for unemployment

(Numbers in thousands)

Reasons	Not seasonally adjusted			Seasonally adjusted					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
NUMBER OF UNEMPLOYED									
Job losers	3,385	2,848	2,957	3,529	3,139	2,916	3,236	3,059	3,087
On layoff	839	726	781	916	899	821	793	863	852
Other job losers	2,546	2,122	2,176	2,613	2,240	2,095	2,443	2,196	2,235
Job leavers	1,068	884	975	989	1,075	993	926	944	904
Reentrants	1,911	1,876	1,880	1,930	1,756	1,784	1,789	1,723	1,901
New entrants	1,089	1,210	1,011	844	887	915	807	777	776
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	45.5	41.7	43.3	48.4	45.8	44.1	47.9	47.0	46.3
On layoff	11.3	10.6	11.4	12.6	13.1	12.4	11.7	13.3	12.8
Other job losers	34.2	31.1	31.9	35.8	32.7	31.7	36.2	33.8	33.5
Job leavers	14.3	13.0	14.3	13.6	15.7	15.0	13.7	14.5	13.6
Reentrants	25.6	27.5	27.5	26.5	25.6	27.0	26.5	26.5	28.5
New entrants	14.6	17.8	14.8	11.6	12.9	13.8	11.9	11.9	11.6
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE									
Job losers	2.8	2.3	2.4	2.9	2.6	2.4	2.7	2.5	2.5
Job leavers	.9	.7	.8	.8	.9	.8	.8	.8	.7
Reentrants	1.6	1.5	1.5	1.6	1.5	1.5	1.5	1.4	1.6
New entrants	.9	4.0	.8	.7	.7	.8	.7	.6	.6

Table A-9. Unemployed persons by sex and age, seasonally adjusted

Sex and age	Number of unemployed persons (in thousands)			Unemployment rates					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
Total, 16 years and over	7,251	6,455	6,625	6.0	5.6	5.4	5.6	5.3	5.4
16 to 24 years	2,701	2,341	2,468	11.8	11.7	11.2	11.3	10.3	10.9
16 to 19 years	1,248	1,112	1,234	15.8	16.5	15.9	15.6	13.6	15.2
16 to 17 years	586	512	569	17.5	17.6	17.8	16.1	15.4	17.5
18 to 19 years	624	627	630	13.9	15.8	14.2	15.3	12.9	13.0
20 to 24 years	1,453	1,229	1,234	9.7	9.1	8.7	8.9	8.4	8.5
25 years and over	4,538	4,077	4,150	4.7	4.2	4.1	4.3	4.1	4.2
25 to 54 years	4,078	3,654	3,691	5.0	4.5	4.3	4.5	4.4	4.4
55 years and over	462	442	461	3.1	2.9	2.9	3.5	2.9	3.1
Men, 16 years and over	3,960	3,495	3,519	6.0	5.7	5.3	5.6	5.2	5.3
16 to 24 years	1,415	1,247	1,334	11.9	12.1	11.2	11.6	10.5	11.3
16 to 19 years	637	625	704	15.9	17.8	15.8	16.2	14.7	16.6
16 to 17 years	292	290	302	17.1	18.5	17.2	16.7	17.0	17.9
18 to 19 years	307	360	370	13.7	17.3	14.7	15.8	14.2	14.7
20 to 24 years	778	622	630	9.9	9.1	8.8	9.1	8.2	8.4
25 years and over	2,535	2,235	2,174	4.7	4.3	4.1	4.3	4.1	3.9
25 to 54 years	2,238	1,940	1,906	4.9	4.5	4.2	4.4	4.2	4.1
55 years and over	300	279	275	3.4	3.4	3.1	3.7	3.2	3.1
Women, 16 years and over	3,291	2,960	3,106	6.1	5.5	5.6	5.6	5.4	5.7
16 to 24 years	1,286	1,094	1,134	11.7	11.3	11.3	11.0	10.0	10.5
16 to 19 years	611	487	530	15.7	15.2	16.0	15.0	12.4	13.6
16 to 17 years	294	222	267	18.0	16.6	18.4	15.5	13.7	17.0
18 to 19 years	317	267	260	14.1	14.2	13.7	14.7	11.6	11.2
20 to 24 years	675	607	604	9.5	9.1	8.7	8.8	8.7	8.7
25 years and over	2,003	1,842	1,976	4.7	4.1	4.2	4.3	4.2	4.5
25 to 54 years	1,840	1,714	1,785	5.0	4.4	4.5	4.5	4.6	4.7
55 years and over	162	163	186	2.6	2.3	2.7	3.2	2.6	3.0

[1] Unemployment as a percent of the civilian labor force.

Table A-10. Employment status of black and other workers

(Numbers in thousands)

Employment status	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
Civilian noninstitutional population	25,826	26,396	26,451	25,826	26,243	26,289	26,340	26,396	26,451
Civilian labor force	17,118	17,013	17,508	16,611	16,779	16,733	16,696	16,735	17,021
Participation rate	66.3	64.5	66.2	64.3	63.9	63.7	63.4	63.4	64.4
Employed	15,043	15,140	15,633	14,725	14,853	14,939	14,816	15,017	15,319
Employment-population ratio[2]	58.2	57.4	59.1	57.0	56.6	56.8	56.3	56.9	57.9
Unemployed	2,076	1,873	1,974	1,886	1,926	1,795	1,879	1,718	1,701
Unemployment rate	12.1	11.0	10.7	11.4	11.5	10.7	11.3	10.3	10.0
Not in labor force	8,708	9,383	8,943	9,215	9,464	9,556	9,642	9,661	9,430

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-11. Occupational status of the employed and unemployed, not seasonally adjusted

(Numbers in thousands)

Occupation	Civilian employed		Unemployed		Unemployment rate	
	July 1987	July 1988	July 1987	July 1988	July 1987	July 1988
Total, 16 years and over[1]	114,652	117,066	7,453	6,823	6.1	5.5
Managerial and professional specialty	27,692	29,006	698	677	2.5	2.3
Executive, administrative, and managerial	13,696	14,541	310	316	2.2	2.1
Professional specialty	13,997	14,465	388	361	2.7	2.4
Technical, sales, and administrative support	35,308	35,880	1,589	1,537	4.3	4.1
Technicians and related support	3,525	3,659	67	89	1.9	2.4
Sales occupations	13,602	13,926	681	626	4.8	4.3
Administrative support, including clerical	18,181	18,295	840	822	4.4	4.3
Service occupations	15,330	15,635	1,250	1,173	7.5	7.0
Private household	1,004	992	62	60	5.8	5.7
Protective service	1,972	2,028	85	79	4.2	3.7
Service, except private household and protective	12,354	12,615	1,103	1,034	8.2	7.6
Precision production, craft, and repair	13,892	14,134	788	676	5.4	4.6
Mechanics and repairers	4,478	4,623	208	141	4.4	3.0
Construction trades	5,251	5,364	387	338	6.9	5.9
Other precision production, craft, and repair	4,163	4,146	194	198	4.5	4.6
Operators, fabricators, and laborers	18,102	18,432	1,760	1,445	8.9	7.3
Machine operators, assemblers, and inspectors	8,289	8,211	774	640	8.5	7.2
Transportation and material moving occupations	4,766	4,900	335	277	6.6	5.4
Handlers, equipment cleaners, helpers, and laborers	5,047	5,321	651	527	11.4	9.0
Construction laborers	867	971	161	124	15.7	11.4
Other handlers, equipment cleaners, helpers, and laborers	4,180	4,350	490	403	10.5	8.5
Farming, forestry, and fishing	4,328	3,979	258	255	5.6	6.0

[1] Persons with no previous work experience and those whose last job was in the Armed Forces are included in the unemployed total.

Table A-12. Employment status of male Vietnam-era veterans and nonveterans by age, not seasonally adjusted

(Numbers in thousands)

Veteran status and age	Civilian noninstitutional population		Civilian labor force							
			Total		Employed		Unemployed			
							Number		Percent of labor force	
	July 1987	July 1988	July 1987	July 1988	July 1987	July 1988	July 1987	July 1988	July 1987	July 1988
VIETNAM-ERA VETERANS										
Total, 30 years and over	7,843	7,905	7,260	7,281	6,877	7,044	383	237	5.3	3.3
30 to 44 years	6,210	5,910	5,956	5,653	5,623	5,455	333	198	5.6	3.5
30 to 34 years	915	685	871	646	786	621	85	25	9.8	3.9
35 to 39 years	2,589	2,142	2,484	2,034	2,348	1,957	136	77	5.5	3.8
40 to 44 years	2,706	3,083	2,601	2,973	2,489	2,877	112	96	4.3	3.2
45 years and over	1,633	1,995	1,304	1,628	1,254	1,589	50	39	3.8	2.4
NONVETERANS										
Total, 30 to 44 years	19,510	20,450	18,474	19,358	17,665	18,630	809	728	4.4	3.8
30 to 34 years	8,869	9,159	8,494	8,735	8,103	8,385	391	350	4.6	4.0
35 to 39 years	6,231	6,810	5,882	6,451	5,643	6,210	239	241	4.1	3.7
40 to 44 years	4,410	4,481	4,098	4,172	3,919	4,035	179	137	4.4	3.3

NOTE: Male Vietnam-era veterans are men who served in the Armed Forces between August 5, 1964 and May 7, 1975. Nonveterans are men who have never served in the Armed Forces; published data are limited to those 30 to 44 years of age, the group that most closely corresponds to the bulk of the Vietnam-era veteran population.

Table A-13. Employment status of the civilian population for eleven large States

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988	July 1988
California									
Civilian noninstitutional population	20,562	20,972	21,012	20,562	20,860	20,894	20,931	20,972	21,012
Civilian labor force	13,960	14,176	14,299	13,799	13,976	14,077	14,142	14,105	14,131
Employed	13,123	13,405	13,461	13,037	13,272	13,362	13,251	13,315	13,374
Unemployed	837	771	838	762	704	715	891	790	757
Unemployment rate	6.0	5.4	5.9	5.5	5.0	5.1	6.3	5.6	5.4
Florida									
Civilian noninstitutional population	9,443	9,671	9,693	9,443	9,609	9,628	9,648	9,671	9,693
Civilian labor force	5,987	6,142	6,199	5,890	6,066	6,093	6,086	6,115	6,102
Employed	5,631	5,847	5,886	5,581	5,771	5,773	5,780	5,831	5,837
Unemployed	356	295	313	309	295	320	306	284	265
Unemployment rate	5.9	4.8	5.1	5.2	4.9	5.3	5.0	4.6	4.3
Illinois									
Civilian noninstitutional population	8,742	8,781	8,786	8,742	8,770	8,773	8,776	8,781	8,786
Civilian labor force	5,911	5,809	5,869	5,801	5,749	5,746	5,733	5,709	5,760
Employed	5,489	5,405	5,507	5,378	5,330	5,332	5,352	5,332	5,394
Unemployed	422	404	362	423	419	414	381	377	366
Unemployment rate	7.1	6.9	6.2	7.3	7.3	7.2	6.6	6.6	6.4
Massachusetts									
Civilian noninstitutional population	4,589	4,603	4,604	4,589	4,599	4,599	4,600	4,603	4,604
Civilian labor force	3,143	3,217	3,200	3,080	3,190	3,163	3,124	3,188	3,137
Employed	3,063	3,106	3,085	3,000	3,096	3,072	3,036	3,076	3,020
Unemployed	80	110	116	80	94	91	88	112	117
Unemployment rate	2.6	3.4	3.6	2.6	2.9	2.9	2.8	3.5	3.7
Michigan									
Civilian noninstitutional population	6,935	6,993	6,999	6,935	6,977	6,981	6,986	6,993	6,999
Civilian labor force	4,601	4,594	4,658	4,536	4,488	4,556	4,498	4,553	4,587
Employed	4,194	4,267	4,296	4,159	4,117	4,220	4,205	4,253	4,251
Unemployed	407	326	362	377	371	336	293	300	336
Unemployment rate	8.8	7.1	7.3	8.3	8.3	7.4	6.5	6.6	7.3
New Jersey									
Civilian noninstitutional population	6,005	6,039	6,042	6,005	6,029	6,032	6,034	6,039	6,042
Civilian labor force	4,037	4,024	4,053	3,950	3,985	3,969	3,922	3,955	3,969
Employed	3,855	3,878	3,884	3,790	3,826	3,831	3,776	3,810	3,825
Unemployed	182	147	168	160	159	138	146	145	144
Unemployment rate	4.5	3.6	4.2	4.1	4.0	3.5	3.7	3.7	3.6
New York									
Civilian noninstitutional population	13,759	13,774	13,777	13,759	13,770	13,769	13,770	13,774	13,777
Civilian labor force	8,659	8,556	8,714	8,474	8,465	8,363	8,429	8,516	8,537
Employed	8,267	8,266	8,350	8,086	8,142	8,072	8,071	8,220	8,171
Unemployed	393	289	365	388	323	291	358	296	366
Unemployment rate	4.5	3.4	4.2	4.6	3.8	3.5	4.2	3.5	4.3
North Carolina									
Civilian noninstitutional population	4,814	4,883	4,889	4,814	4,864	4,869	4,875	4,883	4,889
Civilian labor force	3,369	3,343	3,411	3,295	3,296	3,300	3,297	3,318	3,332
Employed	3,210	3,227	3,302	3,150	3,171	3,177	3,183	3,213	3,235
Unemployed	159	116	109	145	125	123	114	105	97
Unemployment rate	4.7	3.5	3.2	4.4	3.8	3.7	3.5	3.2	2.9
Ohio									
Civilian noninstitutional population	8,159	8,199	8,203	8,159	8,186	8,190	8,194	8,199	8,203
Civilian labor force	5,341	5,325	5,336	5,252	5,369	5,277	5,248	5,271	5,252
Employed	4,981	5,002	5,064	4,866	4,958	4,945	4,922	4,959	4,973
Unemployed	359	323	272	386	411	332	326	312	279
Unemployment rate	6.7	6.1	5.1	7.0	7.7	6.3	6.2	5.9	5.3

See footnotes at end of table.

Table A-13. Employment status of the civilian population for eleven large States—Continued

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	July 1987	June 1988	July 1988	July 1987	Mar. 1988	Apr. 1988	May. 1988	June 1988	July 1988
Pennsylvania									
Civilian noninstitutional population	9,293	9,322	9,325	9,293	9,314	9,315	9,317	9,322	9,325
Civilian labor force	5,794	5,786	5,882	5,633	5,728	5,753	5,661	5,702	5,735
Employed	5,458	5,461	5,568	5,311	5,435	5,477	5,375	5,410	5,433
Unemployed	335	325	315	322	293	276	286	292	302
Unemployment rate	5.8	5.6	5.3	5.7	5.1	4.8	5.1	5.1	5.3
Texas									
Civilian noninstitutional population	12,028	12,067	12,072	12,028	12,056	12,058	12,061	12,067	12,072
Civilian labor force	8,493	8,597	8,492	8,289	8,252	8,334	8,372	8,518	8,277
Employed	7,752	7,911	7,930	7,600	7,582	7,711	7,770	7,926	7,757
Unemployed	741	686	562	689	670	623	602	592	520
Unemployment rate	8.7	8.0	6.6	8.3	8.1	7.5	7.2	6.9	6.3

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[1] These are the official Bureau of Labor Statistics' estimates used in the administration of Federal fund allocation programs.

[2] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and the seasonally adjusted columns.

Table B-1. Employees on nonagricultural payrolls by industry

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1987	May 1988	June 1988p/	July 1988p/	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988p/	July 1988p
Total	102,212	105,956	106,882	106,098	102,430	105,020	105,281	105,489	106,021	106,3
Total private	86,057	88,268	89,459	89,607	85,421	87,700	87,973	88,139	88,661	88,9
Goods_producing industries	24,997	25,470	25,980	25,896	24,788	25,330	25,435	25,466	25,590	25,67
Mining	727	735	742	744	722	733	737	739	740	74
Oil and gas extraction	404.7	418.2	421.4	422.6	408	419	421	425	425	42
Construction	5,288	5,289	5,507	5,628	4,997	5,192	5,238	5,237	5,305	5,31
General building contractors	1,392.9	1,388.9	1,452.3	1,464.5	1,320	1,383	1,400	1,394	1,411	1,38
Manufacturing	18,982	19,446	19,651	19,524	19,069	19,405	19,460	19,490	19,545	19,61
Production workers	12,893	13,271	13,425	13,289	13,006	13,251	13,280	13,302	13,341	13,40
Durable goods	11,127	11,476	11,581	11,505	11,190	11,411	11,459	11,477	11,514	11,57
Production workers	7,352	7,655	7,730	7,654	7,432	7,598	7,632	7,649	7,677	7,74
Lumber and wood products	759.5	756.0	775.9	774.4	740	755	758	757	758	75
Furniture and fixtures	510.0	534.4	535.8	529.0	524	534	535	537	537	54
Stone, clay, and glass products	589.2	591.3	599.8	598.1	579	585	587	585	587	58
Primary metal industries	741.5	778.4	785.8	779.3	751	772	773	776	781	79
Blast furnaces and basic steel products	272.3	281.0	283.0	283.3	272	281	281	281	282	28
Fabricated metal products	1,387.9	1,447.8	1,462.0	1,447.4	1,404	1,439	1,444	1,448	1,456	1,46
Machinery, except electrical	2,011.9	2,125.1	2,145.9	2,150.1	2,020	2,099	2,111	2,121	2,135	2,15
Electrical and electronic equipment	2,064.3	2,106.6	2,125.9	2,115.1	2,075	2,115	2,117	2,115	2,120	2,12
Transportation equipment	2,006.6	2,048.1	2,050.5	2,023.0	2,032	2,025	2,045	2,048	2,046	2,05
Motor vehicles and equipment	826.0	853.1	856.6	838.6	842	835	848	851	849	85
Instruments and related products	694.4	707.6	714.5	712.4	695	705	706	709	712	71
Miscellaneous manufacturing	361.2	381.1	385.1	376.4	370	382	383	381	382	38
Nondurable goods	7,855	7,970	8,070	8,019	7,879	7,994	8,001	8,013	8,031	8,04
Production workers	5,541	5,616	5,695	5,635	5,574	5,653	5,648	5,653	5,664	5,66
Food and kindred products	1,667.4	1,603.3	1,650.9	1,684.6	1,629	1,647	1,648	1,643	1,648	1,64
Tobacco manufactures	51.4	49.2	49.7	49.5	55	54	54	52	53	5
Textile mill products	717.1	728.6	730.6	715.8	730	729	727	728	727	72
Apparel and other textile products	1,081.0	1,103.0	1,106.9	1,055.6	1,116	1,106	1,100	1,100	1,096	1,08
Paper and allied products	679.1	687.0	697.0	691.5	678	687	687	689	691	691
Printing and publishing	1,506.3	1,557.1	1,565.6	1,564.6	1,510	1,548	1,554	1,559	1,564	1,56
Chemicals and allied products	1,031.6	1,057.9	1,072.1	1,077.1	1,025	1,052	1,056	1,060	1,066	1,071
Petroleum and coal products	168.1	167.2	169.4	170.7	165	164	165	166	166	167
Rubber and misc. plastics products	812.6	870.1	879.8	871.7	824	860	864	870	874	88
Leather and leather products	139.9	146.3	147.9	137.4	147	147	146	146	146	144
Service-producing industries	77,215	80,486	80,982	80,202	77,642	79,690	79,846	80,023	80,431	80,632
Transportation and public utilities	5,377	5,559	5,611	5,593	5,373	5,530	5,543	5,556	5,578	5,593
Transportation	3,134	3,315	3,348	3,322	3,151	3,285	3,298	3,308	3,328	3,342
Communication and public utilities	2,243	2,244	2,263	2,271	2,222	2,245	2,245	2,248	2,250	2,251
Wholesale trade	5,908	6,110	6,178	6,204	5,874	6,061	6,089	6,115	6,145	6,169
Durable goods	3,467	3,635	3,676	3,700	3,450	3,591	3,610	3,635	3,658	3,682
Nondurable goods	2,441	2,475	2,502	2,504	2,424	2,470	2,479	2,480	2,487	2,487
Retail trade	18,636	19,130	19,367	19,391	18,543	19,050	19,093	19,130	19,213	19,295
General merchandise stores	2,379.7	2,462.6	2,482.7	2,488.2	2,437	2,543	2,546	2,541	2,546	2,549
Food stores	2,973.8	3,048.8	3,089.0	3,112.5	2,962	3,044	3,049	3,053	3,080	3,100
Automotive dealers and service stations	2,031.8	2,076.4	2,099.3	2,117.6	2,007	2,055	2,064	2,070	2,076	2,092
Eating and drinking places	6,296.7	6,450.2	6,566.5	6,550.4	6,128	6,319	6,326	6,336	6,357	6,378
Finance, insurance, and real estate	6,660	6,657	6,740	6,771	6,570	6,651	6,650	6,656	6,676	6,678
Finance	3,321	3,292	3,325	3,335	3,288	3,306	3,302	3,299	3,305	3,302
Insurance	2,034	2,067	2,078	2,081	2,024	2,060	2,065	2,067	2,072	2,071
Real estate	1,305	1,298	1,337	1,355	1,258	1,285	1,283	1,290	1,299	1,305
Services	24,479	25,342	25,663	25,752	24,273	25,078	25,163	25,216	25,459	25,522
Business services	5,214.8	5,432.2	5,504.7	5,530.0	5,179	5,405	5,420	5,443	5,477	5,492
Health services	6,870.9	7,146.0	7,235.2	7,287.8	6,836	7,088	7,126	7,153	7,206	7,252
Government	16,156	17,688	17,423	16,491	17,009	17,320	17,308	17,350	17,360	17,375
Federal	2,983	2,969	2,986	2,988	2,941	2,970	2,963	2,957	2,951	2,947
State	3,752	4,107	3,913	3,830	3,965	4,031	4,041	4,050	4,030	4,049
Local	9,421	10,612	10,524	9,673	10,103	10,319	10,304	10,343	10,379	10,379

p = preliminary.

Table B-2. Average weekly hours of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1987	May 1988	June 1988p/	July 1988p/	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988p/	July 1988p/
Total private	35.0	34.6	35.0	35.1	34.8	34.6	34.9	34.7	34.7	34.9
Mining	42.0	42.2	42.6	42.2	(2)	(2)	(2)	(2)	(2)	(2)
Construction	38.6	38.2	38.7	38.5	(2)	(2)	(2)	(2)	(2)	(2)
Manufacturing	40.6	40.9	41.2	40.7	41.0	40.9	41.2	41.0	41.1	41.1
Overtime hours	3.6	3.7	3.9	3.8	3.8	3.7	3.9	3.9	3.9	3.9
Durable goods	41.0	41.7	41.9	41.2	41.6	41.5	42.0	41.8	41.8	41.7
Overtime hours	3.6	4.0	4.1	3.8	3.8	3.8	4.2	4.2	4.1	4.0
Lumber and wood products	40.4	40.5	40.9	40.2	40.6	40.1	40.6	40.1	40.2	40.4
Furniture and fixtures	39.3	39.1	39.3	38.7	40.0	39.3	39.5	39.5	39.3	39.4
Stone, clay, and glass products	42.6	42.8	42.8	42.5	42.3	42.3	42.5	42.3	42.4	42.2
Primary metal industries	42.8	43.5	43.7	43.0	43.2	43.3	43.5	43.6	43.6	43.4
Blast furnaces and basic steel products	43.7	43.9	44.5	43.7	43.7	43.7	43.8	43.9	44.3	43.7
Fabricated metal products	40.8	41.7	42.1	40.9	41.5	41.6	42.0	41.9	42.0	41.6
Machinery, except electrical	41.8	42.4	42.5	42.2	42.5	42.5	42.8	42.6	42.4	42.9
Electrical and electronic equipment	40.3	40.7	41.1	40.2	40.9	40.9	41.2	41.0	41.1	40.8
Transportation equipment	41.0	43.0	43.0	41.8	41.8	42.1	43.0	43.0	43.0	42.7
Motor vehicles and equipment	40.9	44.3	44.3	42.1	41.8	42.3	44.1	44.0	44.3	43.0
Instruments and related products	40.8	41.2	41.5	40.9	41.5	41.4	41.8	41.4	41.4	41.6
Miscellaneous manufacturing	38.8	39.0	39.4	38.8	39.5	39.2	39.4	39.2	39.4	39.5
Nondurable goods	40.0	39.9	40.2	40.0	40.3	40.1	40.3	40.0	40.1	40.3
Overtime hours	3.6	3.4	3.6	3.7	3.7	3.6	3.6	3.6	3.6	3.8
Food and kindred products	40.0	40.1	40.4	40.5	40.1	40.1	40.1	40.1	40.4	40.6
Tobacco manufactures	37.3	39.5	39.8	39.0	(2)	(2)	(2)	(2)	(2)	(2)
Textile mill products	41.6	40.7	40.9	40.4	42.3	41.2	41.6	40.8	40.6	41.1
Apparel and other textile products	36.9	36.8	37.3	36.9	37.2	37.0	37.4	36.8	37.0	37.2
Paper and allied products	43.2	43.1	43.0	43.0	43.5	43.2	43.3	43.3	43.1	43.3
Printing and publishing	37.9	37.5	37.6	37.8	38.1	38.1	38.2	37.7	38.0	38.0
Chemicals and allied products	41.9	42.0	42.4	42.0	42.2	42.5	42.1	42.0	42.4	42.3
Petroleum and coal products	44.9	44.1	45.0	45.2	(2)	(2)	(2)	(2)	(2)	(2)
Rubber and misc. plastics products	41.0	41.6	41.7	41.3	41.6	41.7	42.0	41.7	41.6	41.9
Leather and leather products	38.7	37.6	37.9	37.7	38.4	37.9	37.3	37.3	36.9	37.4
Transportation and public utilities	39.6	39.2	39.5	39.7	39.3	38.8	39.5	39.4	39.3	39.4
Wholesale trade	38.2	38.0	38.2	38.3	38.1	38.1	38.3	38.0	38.0	38.2
Retail trade	30.0	28.9	29.4	30.0	29.3	29.0	29.2	29.0	29.1	29.3
Finance, insurance, and real estate	36.2	35.8	35.9	36.2	(2)	(2)	(2)	(2)	(2)	(2)
Services	32.8	32.4	32.7	33.0	32.5	32.4	32.7	32.5	32.5	32.7

1/ Data relate to production workers in mining and manufacturing; construction workers in construction; and nonsupervisory workers in transportation and public utilities; wholesale and retail trade; finance; insurance, and real estate; and services. These groups account for approximatly four-fifths of the total employees on private nonagricultural payrolls.

2/ These series are not published seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separated with sufficient precision.

p = preliminary.

Table B-3. Average hourly and weekly earnings of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Average hourly earnings				Average weekly earnings			
	July 1987	May 1988	June 1988p/	July 1988p/	July 1987	May 1988	June 1988p/	July 1988p/
Total private	$8.90	$9.26	$9.23	$9.25	$311.50	$320.40	$323.05	$324.68
Seasonally adjusted	8.96	9.27	9.28	9.32	311.81	321.67	322.02	325.27
Mining	12.41	12.54	12.55	12.61	521.22	529.19	534.63	532.14
Construction	12.60	12.87	12.87	12.94	486.36	491.63	498.07	498.19
Manufacturing	9.87	10.14	10.16	10.18	400.72	414.73	418.59	414.33
Durable goods	10.38	10.67	10.70	10.70	425.58	444.94	448.33	440.84
Lumber and wood products	8.45	8.54	8.59	8.64	341.38	345.87	351.33	347.33
Furniture and fixtures	7.66	7.87	7.89	7.94	301.04	307.72	310.08	307.28
Stone, clay, and glass products	10.30	10.45	10.47	10.55	438.78	447.26	448.12	448.38
Primary metal industries	11.93	12.13	12.16	12.19	510.60	527.66	531.39	524.17
Blast furnaces and basic steel products	13.63	13.96	13.97	14.00	595.63	612.84	621.67	611.80
Fabricated metal products	9.93	10.23	10.27	10.19	405.14	426.59	432.37	416.77
Machinery, except electrical	10.67	10.90	10.93	10.94	446.01	462.16	464.53	461.67
Electrical and electronic equipment	9.86	10.12	10.15	10.20	397.36	411.88	417.17	410.04
Transportation equipment	12.82	13.31	13.38	13.30	525.62	572.33	575.34	555.94
Motor vehicles and equipment	13.35	14.10	14.17	13.94	546.02	624.63	627.73	586.87
Instruments and related products	9.71	9.87	9.90	10.04	396.17	406.64	410.85	410.64
Miscellaneous manufacturing	7.72	7.94	7.93	8.00	299.54	309.66	312.44	310.40
Nondurable goods	9.18	9.38	9.39	9.46	367.20	374.26	377.48	378.40
Food and kindred products	8.88	9.15	9.12	9.14	355.20	366.92	368.45	370.17
Tobacco manufactures	15.17	15.24	15.78	16.14	565.84	601.98	628.04	629.46
Textile mill products	7.13	7.31	7.33	7.30	296.61	297.52	299.80	294.92
Apparel and other textile products	5.87	6.05	6.08	6.02	216.60	222.64	226.78	222.14
Paper and allied products	11.49	11.64	11.63	11.74	496.37	501.68	500.09	504.82
Printing and publishing	10.24	10.43	10.44	10.47	388.10	391.13	392.54	395.77
Chemicals and allied products	12.37	12.59	12.60	12.71	518.30	528.78	534.24	533.82
Petroleum and coal products	14.51	14.93	15.04	15.24	651.50	658.41	676.80	688.85
Rubber and misc. plastics products	8.96	9.04	9.06	9.10	367.36	376.06	377.80	375.83
Leather and leather products	5.99	6.27	6.27	6.26	231.81	235.75	237.63	236.00
Transportation and public utilities	12.00	12.28	12.29	12.31	475.20	481.38	485.46	488.71
Wholesale trade	9.56	9.87	9.85	9.94	365.19	375.06	376.27	380.70
Retail trade	6.07	6.28	6.26	6.28	182.10	181.49	184.04	188.40
Finance, insurance, and real estate	8.63	9.09	8.96	9.00	312.41	325.42	321.66	325.80
Services	8.34	8.84	8.78	8.80	273.55	286.42	287.11	290.40

1/ See footnote 1, table B-2.

p = preliminary.

Table B-4. Hourly Earnings Index for production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

(1977=100)

Industry	Not seasonally adjusted					Seasonally adjusted						
	July 1987	May 1988	June 1988p/	July 1988p/	Percent change from: July 1987-July 1988	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988p/	July 1988p/	Percent change from: June 1988-July 1988
Total private nonfarm:												
Current dollars	172.6	178.6	178.2	178.9	3.6	173.2	177.0	178.0	178.7	178.6	179.5	0.5
Constant (1977) dollars	93.3	93.6	93.0	N.A.	(2)	93.7	93.5	93.6	93.6	93.2	N.A.	(3)
Mining	181.8	184.2	184.5	185.5	2.0	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Construction	154.0	157.5	157.5	158.2	2.8	154.9	157.5	157.8	157.5	158.0	159.2	.8
Manufacturing	174.7	178.5	178.7	179.1	2.5	174.5	177.3	177.9	178.4	178.8	179.0	.1
Transportation and public utilities	174.9	180.5	180.4	180.6	3.2	176.2	179.4	180.6	181.6	181.3	181.9	.3
Wholesale trade	176.5	182.2	181.6	183.1	3.7	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Retail trade	160.5	165.8	165.6	166.2	3.6	161.1	163.8	164.8	165.4	165.7	166.8	.7
Finance, insurance, and real estate	185.5	195.9	193.7	194.5	4.9	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Services	179.1	189.5	188.4	189.2	5.6	180.9	186.9	188.3	189.9	189.3	191.1	.9

1/ See footnote 1, table B-2.

2/ Change is -.5 percent from June 1987 to June 1988, the latest month available.

3/ Change is -.4 percent from May 1988 to June 1988, the latest month available.

4/ These series are not seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be seperated with sufficient precision.

N.A. Data not available.

p = preliminary.

NOTE: Beginning in 1989, publication of the Hourly Earnings Index series will be discontinued.

Table B-5. Indexes of aggregate weekly hours of production or nonsupervisory workers[1] on private nonagricultural payrolls by industry

(1977=100)

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1987	May 1988	June 1988p/	July 1988p/	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988p/	July 1988p/
Total private	122.9	124.4	127.5	126.1	121.1	123.6	125.1	124.4	125.4	126.3
Goods-producing industries	99.8	102.3	105.1	103.8	99.3	101.6	102.7	102.1	103.2	103.4
Mining	81.5	83.5	85.2	84.6	81.9	83.2	85.9	84.4	85.2	85.2
Construction	145.9	143.3	152.1	155.1	133.0	139.1	141.1	139.3	144.0	142.1
Manufacturing	91.7	95.3	97.0	94.8	93.6	95.2	96.1	95.7	96.1	96.7
Durable goods	88.5	93.8	95.2	92.5	90.7	92.7	94.0	93.9	94.2	94.9
Lumber and wood products	105.0	103.9	108.0	105.6	102.4	103.1	104.7	103.2	103.6	103.2
Furniture and fixtures	107.3	111.5	112.8	109.2	112.7	112.3	113.2	113.7	113.1	115.0
Stone, clay, and glass products	88.3	89.8	91.3	90.2	86.1	87.5	88.3	87.5	88.1	88.1
Primary metal industries	62.5	68.2	69.3	67.3	64.1	66.9	67.6	68.1	68.7	69.2
Blast furnaces and basic steel products	51.4	54.6	55.9	54.9	51.3	54.1	54.8	54.6	55.4	54.9
Fabricated metal products	85.3	91.7	93.6	90.0	87.9	90.8	91.8	92.1	92.8	92.7
Machinery, except electrical	83.9	91.4	92.4	91.8	86.2	90.4	91.5	91.6	91.6	94.1
Electrical and electronic equipment	97.5	101.2	103.0	100.3	100.2	101.9	102.8	102.3	103.0	103.3
Transportation equipment	92.9	100.5	100.5	95.3	97.1	96.8	100.0	100.2	100.1	99.8
Motor vehicles and equipment	80.2	91.1	91.5	84.3	83.3	84.8	89.8	89.9	90.5	88.7
Instruments and related products	100.4	105.4	107.5	105.4	102.8	105.2	106.5	106.1	106.6	107.9
Miscellaneous manufacturing	78.5	83.6	85.3	81.8	82.2	84.5	85.0	83.9	84.7	85.8
Nondurable goods	96.6	97.6	99.6	98.2	97.8	98.8	99.1	98.4	98.9	99.5
Food and kindred products	102.2	97.2	101.7	104.4	99.6	100.9	101.0	100.5	101.7	101.7
Tobacco manufactures	66.1	66.2	67.6	65.6	75.5	74.8	73.8	71.0	71.4	75.3
Textile mill products	81.0	80.3	81.1	78.3	84.0	81.7	82.2	80.6	80.0	81.2
Apparel and other textile products	83.2	85.0	86.5	80.8	87.0	85.7	86.2	84.7	84.9	84.6
Paper and allied products	100.3	100.7	102.3	101.2	101.0	101.3	101.4	101.5	101.3	101.9
Printing and publishing	130.1	134.5	135.0	135.2	131.6	136.0	136.5	134.9	136.4	136.4
Chemicals and allied products	94.4	97.3	99.5	98.7	94.5	97.9	97.1	97.4	98.8	98.9
Petroleum and coal products	88.3	85.5	88.6	90.6	85.9	83.5	84.9	85.3	86.6	88.0
Rubber and misc. plastics products	112.4	122.8	124.7	122.1	116.1	121.8	122.9	123.1	123.4	126.3
Leather and leather products	56.3	56.4	57.4	52.7	59.1	56.9	55.5	55.5	54.9	55.2
Service-producing industries	135.7	136.7	139.8	141.5	133.2	135.8	137.4	136.8	137.8	139.0
Transportation and public utilities	110.1	112.8	115.0	115.0	109.5	111.2	113.5	113.5	113.6	114.4
Wholesale trade	120.3	124.2	126.4	127.3	119.2	123.6	124.8	124.4	125.1	126.2
Retail trade	126.5	124.7	128.7	131.2	123.0	124.8	126.0	125.1	126.2	127.5
Finance, insurance, and real estate	143.5	139.5	142.0	144.5	141.4	139.6	141.1	140.1	140.4	142.1
Services	155.8	158.8	162.1	163.9	152.9	157.2	159.0	158.3	159.9	161.1

[1] See footnote 1, table B-2

p = preliminary.

Table B-6. Indexes of diffusion: Percent of industries in which employment[1] increased

Time span	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span:												
1986	57.0	47.3	49.5	50.8	51.9	46.8	51.9	54.1	51.4	53.0	58.9	58.9
1987	50.8	59.2	61.1	62.4	62.4	61.6	70.8	62.2	68.1	67.3	67.8	68.4
1988	61.6	61.6	62.2	63.8	58.1	p/69.7	p/63.8					
Over 3-month span:												
1986	50.0	47.6	45.7	46.2	46.2	46.2	48.1	51.9	50.5	55.9	59.7	59.2
1987	57.6	57.0	65.1	69.2	68.1	71.9	73.8	76.8	74.1	76.5	78.1	73.0
1988	71.6	66.8	67.0	66.8	p/71.6	p/70.8						
Over 6-month span:												
1986	48.1	47.3	43.8	42.7	43.2	47.0	46.5	50.0	55.9	53.2	55.9	58.4
1987	64.6	64.3	63.0	70.3	72.4	77.3	78.4	79.7	82.7	77.8	77.0	76.5
1988	73.5	70.3	p/70.5	p/73.8								
Over 12-month span:												
1986	42.2	41.6	43.8	44.9	45.7	48.6	46.8	48.6	51.6	53.8	56.5	57.8
1987	63.8	67.3	69.5	73.5	76.8	76.8	78.9	78.9	79.7	78.4	77.8	p/81.9
1988	p/78.6											

[1] Number of employees, seasonally adjusted for 1, 3, and 6 month spans, on the payrolls of 185 private nonagricultural industries. Data for the 12-month span are unadjusted.

NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components are counted as rising.) Data are centered within the spans.
p=preliminary.

Senator **Sarbanes**. Commissioner, let me follow up on your statement. Are these discrepancies between the business survey and the household survey any greater or different from a historical pattern in recent times?

Mrs. **Norwood**. We have had differences in the past, but we have not had them this large for some time now.

Senator **Sarbanes**. How much of the difference, in your judgment, does the multiple job holding account for?

Mrs. **Norwood**. I really don't know how much of it.

Senator **Sarbanes**. Half of it?

Mrs. **Norwood**. I just don't know. I really don't know. I think there are a number of issues. Some of the statistical procedures in the two surveys could explain some of the difference. The truth obviously lies somewhere between the two surveys, but I believe closer to the establishment survey. There may be some problem with the population counts in the household survey; that is, the undercount issue certainly has some effect on the household survey figures and may perhaps be dragging them down a bit. There are always in the summertime seasonal adjustment problems, and I believe that they are more difficult in the household survey with so many youngsters coming in. And the timing of their entrance and exit keeps changing.

But we really, I must admit, do not know specifically why these two surveys are different.

Senator **Sarbanes**. On Wednesday the New York Times carried an article indicating that 55 percent of New York City residents are in the labor force compared to 65 percent nationwide. Apparently a comparable pattern exists for other large cities, as I understand it.

What is the explanation for this?

Mrs. **Norwood**. Many of the people in central cities tend to be, first of all, people who have been more disadvantaged than others, have less skill, as Senator D'Amato was talking about a few minutes ago. Also, they may be located in areas where there aren't so many jobs. Central city people on average have a harder time in the labor force.

Senator **Sarbanes**. On Thursday the Wall Street Journal had an article on the disappearance of jobs in rural areas of the United States.

How does the current unemployment rate in rural areas compare with unemployment in metropolitan areas?

Mrs. **Norwood**. Unemployment may not be the best measure of the conditions in rural areas. Because as you know, to be counted as unemployed you have to be looking for work, and in rural areas there are people on farms who are not looking for work, depending on the time of the year. So they may be escaping our numbers. Clearly, the rural areas have had more difficulty than some of the rest of the country.

Senator **Sarbanes**. As I understand it, if a farmer is in dire straits but still farming, in other words, hasn't just thrown it all in, he is not counted as unemployed. Is that correct?

Mrs. **Norwood**. That is correct. That is what I meant. Unless he actually tells the interviewer that he is, one, not working and, two, looking for work, he is not going to be counted among our unemployed.

Senator SARBANES. In countries with very small populations but highly developed, like perhaps in Scandinavia, how much more comprehensive are their surveys in terms of ours when they determine unemployment?

Mrs. NORWOOD. They are not more comprehensive than ours. What does happen in Scandinavia is that because of their administrative systems they are able to track people, which we cannot do. Everyone has a card and everyone has a number and all of the data are there. We in this country do not track people, as you know, and we believe we should not. Some of their administrative data systems are much richer than ours, but our survey system is probably more comprehensive than theirs.

Senator SARBANES. Have we ever taken a county or some relatively small defined geographical area, looked at what a survey gives us and then gone in and actually done the entire thing to see how that would compare?

Mrs. NORWOOD. There have been comparisons of administrative data. In Florida, for example, we had some questions about the unemployment data and its use in triggering programs, and we looked at some of the immigration data and looked at some of the food stamp data and things of that sort. So there have been attempts to do that.

I think Tom Plewes may know more about that than I.

Mr. PLEWES. We are going to be doing one experiment this year on the Standing Rock Indian Reservation to try to determine whether or not there is appropriate coverage in both the surveys and censuses. But this isn't done very often, Mr. Chairman.

Mrs. NORWOOD. I am really rather concerned about the fact that we know so little about some of the problems of our minority population. We have very little data, apart from the decennial census, on Native Americans, for example. The Asian American group, which is increasing considerably, is still not large enough for our samples to produce data. We do have information on the Hispanic population, but the data have a very much larger error than we would like them to have. Even the black population, which is a substantial portion of the population and labor force now, still requires a fairly large change to meet statistical significance. The change, for example, has to be almost a full percentage point in the monthly unemployment rate for it to be statistically significant.

Senator SARBANES. My time is up.

Senator Roth.

Senator ROTH. Thank you, Mr. Chairman.

On the question of the minorities, my understanding is that the ratio for black workers advanced to 56.8 percent in July, and for Hispanics it is 61.9 percent.

Mrs. NORWOOD. Yes.

Senator ROTH. How does that compare with past performance?

Mrs. NORWOOD. It is considerably higher than it has been. Both the black population and especially the Hispanic population have been moving into the labor force and they have been finding jobs. Their employment-population ratios are still considerably below those of the white population, but they have improved considerably.

Senator **Roth**. If I understand you, they are as high as they ever have been.

Mrs. **Norwood**. Yes.

Senator **Roth**. From that standpoint, progress is being made, although, as you point out properly, it is not nearly as high as it should be or we would like it to be.

The civilian employment-population ratio stands at 62.3 percent. Has that ever been higher?

Mrs. **Norwood**. No.

Senator **Roth**. How does our civilian unemployment rate compare with other Western European nations, like France and Germany?

Mrs. **Norwood**. It compares quite favorably with most of them. We are lower than Canada. We are considerably lower than France. We are lower than Germany, lower than Italy, and somewhat lower than the United Kingdom. Some of the Scandinavian countries have lower unemployment rates than we, and the Japanese also have a lower unemployment rate.

Senator **Roth**. Are our methods of counting unemployment comparable?

Mrs. **Norwood**. The comments that I have been making are based upon data that the Bureau of Labor Statistics has adjusted to the extent possible for comparability to our concepts. There are some differences in custom, of course, that also have an effect.

Senator **Roth**. There has been a lot of justifiable concern about the manufacturing sector, concern that it is going down the drain. Recent articles in Forbes and U.S. News & World Report have shown, however, that the hollow corporation idea has not been very accurate.

Would you comment on the recent trend in manufacturing employment? Does that basically reflect improvement in our manufacturing sector?

Mrs. **Norwood**. Yes, I believe so. We are seeing considerable pickup in employment in manufacturing, particularly in the export-related industries, and productivity in manufacturing is doing quite well. Output in manufacturing increased over the last year at about a 6-percent rate.

Senator **Roth**. Productivity in the most recent period in manufacturing?

Mrs. **Norwood**. In manufacturing. Over the last year it was just under 3 percent, 2.8 percent. That is less than it had been, but it still is a decent rate of growth.

Senator **Roth**. You were saying that the manufacturing jobs are particularly strong in the export area?

Mrs. **Norwood**. Yes. Machinery, for example, and many of the other export-related industries.

Senator **Roth**. So it would appear that there is a revitalization in the manufacturing sector?

Mrs. **Norwood**. I think so. Very definitely. It appears to be export led. We have seen a change in manufacturing capacity as well. I think we are seeing more efficient plants coming into operation.

Senator ROTH. Do you have any figures as to how many manufacturing jobs have been created in the last 12 months?

Mrs. NORWOOD. 540,000.

Senator ROTH. Where would those jobs stand? Low? Medium? Do you have any figures on that?

Mrs. NORWOOD. Do you mean in terms of wages?

Senator ROTH. Yes.

Mrs. NORWOOD. There are all kinds, I'm sure. Many of the export-related industries are high-paying industries, certainly. Many of the service jobs are high paying as well as low paying.

Senator ROTH. Doesn't there seem to be evidence of upgrading in the mix of occupations? About what proportion of the jobs created over the last 12 months have been in professional and managerial occupations?

Mrs. NORWOOD. A very high proportion. About 55 percent.

Senator ROTH. That seems unusually high. What would be the reason for that?

Mrs. NORWOOD. I think what is happening is that we have seen and are continuing to see some shift in industry mix, but we are also seeing a very large shift in occupational mix. We are finding that many of the jobs that used to require very little training are not growing as fast as those that require a lot of training and cognitive abilities. So the managerial jobs, the professional and technical kinds of jobs are growing more than are, say, the janitorial jobs or the labor jobs.

Senator ROTH. My time is up. Just a followup.

What share was accounted for by precision production, craft and repair?

Mrs. NORWOOD. We can calculate that in a moment.

Mr. Plewes tells me about 10 percent.

Senator ROTH. Thank you, Mr. Chairman.

Senator SARBANES. Senator Proxmire.

Senator PROXMIRE. Mrs. Norwood, I notice that there are 18,000 employees in the Labor Department and you were the one and only one who got the distinguished rank award. So I add my congratulations to the chairman's.

Mrs. NORWOOD. Thank you.

Senator PROXMIRE. Let me ask you about what I said when I opened with my remarks this morning. With 40 percent of the contracts expiring this year, with economists saying that they expected big wage increases, but with wage increases apparently relatively very low, how do we explain that? Why is that? And why are work stoppages under these circumstances so very few?

Mrs. NORWOOD. We have gone through a period of adjustment. I think that most workers understand quite fully that adjustment will be required in the future. There is much more concern now about job stability, about maintenance of the jobs. A lot of the negotiation is on the maintenance of jobs, particularly with the concerns that certain of our more old-line facilities might be closed down. That is one point.

Senator PROXMIRE. I am really astonished. I worked with labor unions before I came here. The experience I have had is when you tell your workers that you are negotiating a cut in their wages, 63-cent-an-hour cut, as I pointed out, or a 20-percent cut as they did in

Oklahoma, you would get nothing but fury. People are not very patient about that. They may be understanding, but that takes a whale of a lot of understanding.

Mrs. **Norwood**. I think it does.

Senator **Proxmire**. Especially with inflation. Not big inflation, but inflation that is substantial.

Mrs. **Norwood**. It does. On the other hand, there is the problem in some industries, particularly some of the smaller and some of the nondurable industries, of the maintenance of jobs. People are concerned about that as well.

I think another point that ought to be understood is that the trade union movement is not as strong as it used to be.

Senator **Proxmire**. I think that is a very important point.

Now let me ask you about this. Senator Roth pointed out, properly so, that unemployment is much, much higher in Europe. I understand the average unemployment in Europe is about 9.5 percent. Even Germany, which is the strongest economy in Europe, has 9 percent unemployment; Ireland, 20 percent; Spain, 19 percent; and so on.

Doesn't this indicate that the likelihood of our being able to improve our balance of trade with Europe when we have very low unemployment relatively and they have much higher unemployment is going to be quite difficult? They are likely to resist that. They are going to say, look, after all, we already have very high unemployment. If we are going to produce less and you are going to produce more, the effect on us is going to be adverse. So our NATO allies, our friends, the people you work with, it seems to me, are going to be resistant to any further adjustment in their currency to improve our trade balance.

Mrs. **Norwood**. I think it depends on how much that is translated into national income and how much demand there is in Europe and Japan for the goods that we sell. Not all of the countries of Europe are affected by very high unemployment rates. Indeed, France probably has the highest. Spain, I think, has problems in counting their unemployed. France has the highest of those that we measure, and then the United Kingdom would be next at 8.4 percent. The others are in the 7 percent range.

Senator **Proxmire**. You say in your statement that unemployment remained near the June level and according to the business survey it improved, but household data indicate a substantial increase, and a statistically significant increase, as I understand it. It went from 5.2 to 5.4 overall, unemployment did. Is that correct?

Mrs. **Norwood**. The overall rate, including the Armed Forces, did go up two-thirds of a percent, and that is statistically significant. The civilian rate only rose one-tenth, and that is not statistically significant.

Senator **Proxmire**. If unemployment had gone down from 5.2 to 5.0, would you have said that wasn't much of a change?

Mrs. **Norwood**. It would depend. If we had the same situation that we have now with these surveys, I would have said that it was the same thing. The unemployment rate has been edging down and then edging up and then edging down. I think we need to look at it over a longer period than a month. We looked primarily at the civilian unemployment rate, in any case.

Senator PROXMIRE. That only went up one-tenth of a percent.

Mrs. NORWOOD. That's right.

Senator PROXMIRE. Overall it was two-tenths of a percent.

Mrs. NORWOOD. That's right.

Senator PROXMIRE. The productivity figures released yesterday by BLS indicate that productivity declined 2.2 percent in the second quarter.

Mrs. NORWOOD. Yes.

Senator PROXMIRE. It declined because hours increased much faster than output.

Mrs. NORWOOD. Yes.

Senator PROXMIRE. This is hard to understand. Why would employers add workers faster than output in the second quarter? Were there any unusual factors affecting the data on growth in hours?

Mrs. NORWOOD. Yes, there were. There was a very large increase in nonfarm proprietors' hours, which does not affect the manufacturing statistics since there are so few proprietors in manufacturing. But there was about a 24-percent increase there.

Senator PROXMIRE. Proprietors' hours. That's a new category to me.

Mrs. NORWOOD. Self-employed, really. Self-employed people.

Senator PROXMIRE. The smallest of small businesses?

Mrs. NORWOOD. It could be. It is one quarter. I think it is wiser to look at these data over a longer period of time. Nonfarm business went up about 1.6 percent over the year. I think that's a better way to look at it right now.

Senator PROXMIRE. My time is up.

Senator SARBANES. Senator D'Amato.

Senator D'AMATO. Thank you, Mr. Chairman.

Mrs. Norwood, the skill levels of those entering the job market are not sufficient to meet the requirements for many of the available jobs. Is that not correct?

Mrs. NORWOOD. That is quite correct.

Senator D'AMATO. Have you noticed any trend developing in that area? Is it becoming more acute and will that be a greater problem in the future?

Mrs. NORWOOD. Our statistics show that minorities are less likely to work in the occupations for which we are projecting the largest job growth to the year 2000. Using the current employment status for Hispanics and blacks, what you find is that those minorities are concentrated in jobs that are projected to have the slowest growth in the future. Jobs which are going to have the highest growth are jobs which, at least for now, are not frequently filled by minorities. One of the major reasons may be that they don't have the training that is required for some of them. There may be other reasons as well, but that is a major concern.

It is quite clear that many of the jobs that are increasing are the technical kinds of jobs. We are expecting a lot of health service technicians, a lot of business service people with computer skills, finance and insurance. Jobs which often require a great deal of skill. The kinds of jobs as clericals, even some of the labor jobs, as you pointed out earlier, are being taken over often by machinery.

Senator D'AMATO. Your statistics indicate that our larger urban centers, for example, New York City, average about 10 percent less of the labor force employed. I think it is 55 percent as compared to 65 percent of the total population. You mentioned the large number of minority concentration. Wouldn't another factor be that that takes in many of the young people who also fall into that category who have the skill levels that have to be developed and also many of our older people?

Mrs. NORWOOD. Yes.

Senator D'AMATO. We have a double problem in our older, inner corps cities; isn't that the case?

Mrs. NORWOOD. Yes.

Senator D'AMATO. Let me say this, Mr. Chairman. It would appear rather obvious given Mrs. Norwood's predictions and the trends that as it relates to job training if we want to continue—and I think we all want to see success in terms of creating jobs and matching skills in those levels—that we are going to have to work much harder in the job-training area so that millions of Americans will be able to fill those jobs, so that both the productivity levels will increase and so that the unemployment levels continue downward and don't continue in an upward spiral. That is going to be an absolute requirement.

I have had the opportunity of reading Mrs. Norwood's testimony from last month, and having had some conversations with some of our nation's leading educators, they are very, very, very much concerned about this phenomenon becoming very pronounced and creating a massive dislocation in the job market in the future. I say dislocation, because we are not producing the kinds of service jobs that do not require the kind of skill levels that are going to be required with the area of growth in the future.

Mrs. NORWOOD. I think we have to understand that we now have a lot of people who have been left behind. They are people who have very little skill. They have very great difficulty in the labor market. The projections that we and others have made show clearly that the tilt in the future is going to be toward the jobs that require more cognitive ability, not less; more education, not less. It is quite clear that absent special kinds of training programs and improved education that this difference between the bottom and the top will increase.

Senator D'AMATO. Mr. Chairman, I just want to touch on one other aspect.

Mrs. Norwood, would it be correct if I were to say that a very positive sign has been the trend in manufacturing productivity over the past 5 years?

Mrs. NORWOOD. That is correct. It has been encouraging.

Senator D'AMATO. That trend will probably be one of those that would be most disruptive if we do not address ourselves to the skill levels of those people coming into the job market.

Mrs. NORWOOD. It would apply as well, I believe, to some of the services industries.

Senator D'AMATO. Thank you very much.

Senator SARBANES. Commissioner, how does our employment-population ratio compare with that of other industrial countries?

Mrs. NORWOOD. If we look at this over the last year, it is considerably higher than most of the countries, very much higher than Italy and Germany, higher than France, about a point higher than Japan, a lot higher than Australia. Sweden is higher than we are, as we would expect.

Senator SARBANES. Isn't one of the major trends that has taken place as you look at the U.S. economy the emergence of the two-earner family?

Mrs. NORWOOD. Yes.

Senator SARBANES. Would that help to explain the difference in the employment-population ratio?

Mrs. NORWOOD. It would not help to explain the difference in the Scandinavian countries where women are more likely to work than in the United States.

Senator SARBANES. It would, because it would explain why Sweden's is even higher if you accept the proposition that they have more two-earner families there.

Mrs. NORWOOD. The Swedish civilian employment-population ratio is a little over 66 percent. Ours for 1987 was 61.5 percent. I would expect it to be more than a 5-point difference.

But you are quite right. The majority of all of our husband-wife families now have more than one earner. There are lots of women in the work force and they are going to stay there.

Senator SARBANES. As I understand it, more than half of mothers with children under age 6, in other words, preschool children, work. Is that correct?

Mrs. NORWOOD. That is correct. And about half of the mothers of children one year or younger are working.

Senator SARBANES. Do you have any surveys that show why a lot of these mothers are working? Are they working because they perceive that is the only way they can make ends meet?

Mrs. NORWOOD. We don't really have surveys in which we go out and ask people that. We do know that a lot of these women are working because it is necessary for them or they believe it is necessary for them to provide income.

I think also what is happening, particularly with the younger people, is that they have developed a standard of living which requires two earners.

It is quite true that now, as in the past, most women are working because they have to work.

Senator SARBANES. I wanted to ask about the hourly earnings index. According to your statement this month it is going to be discontinued. Is that correct?

Mrs. NORWOOD. That's correct.

Senator SARBANES. Could you explain briefly what the hourly earnings index has indicated and why you are discontinuing it?

Mrs. NORWOOD. The hourly earnings index comes out of the basic business survey. From that survey, we collect the total payroll and the total number of employees. By dividing one by the other you get a figure on average hourly earnings. That series is adjusted for broad industry shifts and for overtime in manufacturing to obtain the hourly earnings index.

It is not as good a measure of wage change as the employment cost index, which comes out every quarter. Because of budget constraints it was impractical to maintain both series. So one of the decisions that I made was to discontinue the hourly earnings index—HEI—and to pull out of the employment cost index a set of data with occupational coverage similar to the HEI so that people who were users of the hourly earnings index would be able to continue tracking that group of workers. The employment cost index is a better index because it also adjusts for occupational mix and other job characteristics that the hourly earnings index does not do.

We will continue to publish every month data on average hourly and weekly earnings in dollar terms with full industry detail.

Senator SARBANES. As I understand your report, the hourly earnings index over the last year in real terms has decreased. Is that right?

Mrs. NORWOOD. Yes.

There is one other point. The hourly earnings index does not include lump-sum payments, while the employment cost index does. Trying to figure out how to collect information on lump-sum payments in the monthly establishment survey with a very quick turnaround time has been a big problem for us. We are working on that, but it is difficult. So the ECI is more comprehensive.

Senator SARBANES. If you are talking about the return to a working person, the hourly earnings index is a better indicator than medium-family income, because it is not impacted by whether you have moved from a one-earner to a two-earner family. Is that correct?

Mrs. NORWOOD. I suppose that is probably so, but the difference is not between family income and the hourly earnings index but rather between the hourly earnings index and the employment cost index, which essentially have as their purpose the measurement of the same thing—wage change. The employment cost index does it better.

Senator SARBANES. But does it quarterly.

Mrs. NORWOOD. That's correct.

But the raw data will be there and people will be able to construct the index if they wish. We believe the employment cost index is a better measure of wage change. And we had to cut back.

Senator SARBANES. Senator Roth.

Senator ROTH. Isn't it true that the hourly earnings index not only excluded lump-sum payments but fringe benefits as well?

Mrs. NORWOOD. Yes.

Senator ROTH. Have fringe benefits been increasingly a significant proportion of payments?

Mrs. NORWOOD. Yes. The employment cost index has a wage and salary component and then it has a total compensation component. It is a newer index that has been designed really to cope with some of the problems that we had in the hourly earnings index.

Senator ROTH. Going back to some questions Senator D'Amato was asking about the need for training, particularly with the minorities, that that was a key problem, is it also going to be true that even those in the work force are going to be constantly in need of retraining? Do you foresee that in this changing technology, changing global economy that constant retraining is going to be increasingly important?

Mrs. NORWOOD. Yes, we do. It is one of the reasons that we believe that the program in which we work with the States to identify the people who are affected by plant closings is so important. The BLS finds out about their characteristics and then the State employment security agencies can do something to help them.

Senator ROTH. We mentioned that in a number of situations the employment-population ratio for minorities has improved although it remains at a level that is unsatisfactory. That is also true, I gather, with respect to adult females. They reached a level of 56.7 in July. Is that the highest level yet reached?

Mrs. NORWOOD. It is extremely high. It is about what it has been. It is quite high.

Senator ROTH. On manufacturing productivity, what did yesterday's report say about that in the second quarter and what is the conclusion to be drawn from that?

Mrs. NORWOOD. In the second quarter it showed that output per hour was at 3.5 percent, and that is because output was up considerably. I think that is quite encouraging.

Senator ROTH. What proportion of the new jobs in this expansion are in full-time permanent positions?

Mrs. NORWOOD. The last time I looked at that was a few months ago, and the figure was 90 percent.

Senator ROTH. So 10 percent would be part time?

Mrs. NORWOOD. Yes. We have 15 million people in this country who are working part time because that's exactly what they want to do. So the economy has adjusted to develop jobs for those people. We also, however, still have more than 5 million people who are working part time but who really want full-time jobs. That's the part time for economic reasons. That is still quite a high number.

Senator ROTH. Do we have any breakdown to what extent the part-time jobs are filled by people because that is what they want and what percentage are those who really seek full-time employment?

Mrs. NORWOOD. The only figures that I have here with me are that the voluntary part time are 15 million and the part time for economic reasons are 5.4 million.

Senator ROTH. Over the course of the expansion have involuntary part-time jobs gone up or down?

Mrs. NORWOOD. The involuntary part-time jobs, that is, the part time for economic reasons, rose enormously during the recession of 1981–82, and it reached a very high level. It has come down considerably since then. But because it rose to such a high level it is still fairly substantial by historical standards.

Senator ROTH. Thank you, Mr. Chairman.

Senator SARBANES. Senator Proxmire.

Senator PROXMIRE. Mrs. Norwood, the last time we had a survey of the underground economy, as I understand it, it was done by the Internal Revenue Service in 1983, 5 years ago. Since then we have had what many people feel has been a terrific plague of drugs with far more people involved in that kind of activity. In 1983, I understand, the Internal Revenue Service found that there was $100 billion in lost revenue, which would indicate probably at least $300 billion in activity. If you allow $20,000, that would mean 15 million people are employed in selling drugs or dealing in drugs one way or another. In gambling we have a somewhat similar situation. Much of that is legalized but much of it is not legalized and is underground.

When the Bureau of Labor Statistics people go around to the households and knock on the door and ask do they inquire in a way that would cover any significant part of this? Do they ask is so and so employed so that the person answering the question doesn't have to say yes, he's running drugs and doing a good job at it?

Mrs. **Norwood**. These are Census Bureau interviewers who do this work for us and we believe that we use procedures so that for the most part we get accurate responses from people even though they may be engaged in illegal activities or other kinds of off book activities.

I recently went to Philadelphia and went out on some interviews with the agents and then I met with all of them. I asked them questions about that and I asked them in particular about the difficulties they had in going into the central cities. Many of them felt that the data they were getting was quite good. Several of them talked about particular situations where it was quite clear that the mother was reporting that the son was engaged in some kind of activity that the son did not want reported, but the mother reported it nevertheless.

So we think we are getting a good part of that. I cannot tell you that we are getting all of it.

Senator **Proxmire**. Would you estimate that there might be 1 million or 2 million people who are engaged in activities that are not counted but that are productive as far as income is concerned, gambling, prostitution, drugs, whatever?

Mrs. **Norwood**. I think I would be surprised if it were that high.

Senator **Proxmire**. Why wouldn't it be worthwhile for us to include that in the updating of the survey made by the Internal Revenue Service and then kind of cross work with them to see if we could reconcile those figures? It seems to me it is useful to know when you have that kind of a tremendous proportion of the economy involved, hundreds of billions of dollars.

Mrs. **Norwood**. I am not completely familiar with what the Internal Revenue Service did, but it is my understanding that they worked at it in terms of tax revenue. That was their purpose.

Senator **Proxmire**. Even that, it seems to me, they should bring up to date. Five years is a long time.

Mrs. **Norwood**. I can't speak for the Internal Revenue Service. Such an analysis is a very difficult thing to do. There is some question about the validity of these estimates. Even if you get those estimates right, if you try to translate them into employment you have to make a lot of heroic assumptions about productivity, and I think it gets to be very difficult, to say the least.

Senator **Proxmire**. In July the Bureau of Economic Analysis issued revised GNP figures for 1985, 1986, and 1987. Revised. What effect did the GNP revisions have on the productivity figures for those 3 years?

Mrs. **Norwood**. We always have to issue new productivity figures when the GNP data are revised. Mr. Mark is here and he can tell you about the specific effects.

Senator **Proxmire**. Before he answers, let me refine my question.

Did it change the overall picture of strong productivity growth in manufacturing and very weak growth in the rest of the economy?

Mr. **Mark**. No. In fact, it enhanced it a little bit.

There is a question in the manufacturing area. The gross product originating figures are showing a very sharp rise in output in the GNP data.

Senator **Proxmire**. What is that? I missed that.

Mr. **Mark**. That is the manufacturing output component of the GNP. That has been showing a very sharp increase. The revisions in the data did support that again. The lower growth rate in nonmanufacturing was also substantiated.

Senator **Proxmire**. Yesterday's productivity figures and the employment cost index released last week report that private sector labor costs rose about 4.5 percent in the past 12 months, but for labor costs in manufacturing table 3 in the productivity release reports a 3.1 percent rise, while table 1 of the ECI report a rise of 5 percent.

What explains that very, very sharp difference?

Mrs. **Norwood**. They are very different measures. The employment cost index is a sample survey which is based upon occupations in business establishments, whereas the productivity data by definition have to be based upon the estimates which are made in the national accounts, and they come from a variety of sources.

Senator **Proxmire**. Did labor cost rise 3 percent last year or 5 percent?

Mrs. **Norwood**. Wage and compensation costs rose by 4.5 percent according to the ECI, and I would stand by that. Perhaps Mr. Mark would like to disagree.

Mr. **Mark**. I wouldn't disagree. It is just that they measure different things. The hourly compensation series reflects the shift in the mix among industries, among occupations, and therefore will show a difference from the employment cost index, which holds these shifts constant.

Senator **Proxmire**. Last month you reported a 346,000 increase in payroll employment in June. This has been revised now to 532,000. That is an unusually large revision. Why was so much of the June employment growth missed in last month's release?

Mrs. **Norwood**. I don't know. We had, as a matter of fact, an unusually high proportion of reports for June, but apparently business activity was still greater than was reported to us.

But you are quite right. That is an unusually large difference between the first closing and the second closing.

Senator **Proxmire**. What revisions in the data collection process could be taken to improve the accuracy of the payroll figures?

Mrs. **Norwood**. I think the most important one is that which we are setting out to do, and that is to improve the basic file of business establishments that this is selected from. That would go a long way, particularly if combined with other studies, to try to figure out how to identify the establishments that are new and those that die off more quickly.

The second thing that could be done is something that we also have underway on an experimental basis. That is the modernization of the collection procedures for the whole survey. In 10 States we have computer-assisted telephone collection going on and we are experimenting with something totally new called touch-tone data entry, which is another approach.

So we are moving to try to do that.

Mr. Plewes probably has something more to say about that.

Mr. **Plewes**. I don't think I can add very much to what the Commissioner has said. There was the large revision that came in the returns that we received from the mid- to large-size firms. We had underestimated the amount of growth there, but it was widespread. It wasn't just in any particular industry, which indicates that there is no particular bias in the survey that we have to worry about. We just missed some of the growth last month and when we received additional returns we found out that we had underestimated the first preliminary closing.

Senator **Proxmire**. During the past year there has been a terrific discrepancy in the payroll survey, which reported 3.9 million new jobs, while the household survey reported an increase in total employment of 2.4 million. You have explained in part why this should be. The payroll employment survey would provide for two jobs if a person is working at more than one job. When you go to the household and say is so and so employed, they say sure he's employed, but that only counts once. But you can't tell us how big that particular element is.

Recognizing that, which survey do you think is currently giving the more accurate picture of job growth in the U.S. economy?

Mrs. **Norwood**. Right now I believe that the business survey is providing a more accurate assessment. It may be slightly high, but I think that the truth is closer to the business survey than it is to the household survey.

Senator **Proxmire**. If you are looking for employment and unemployment, it would seem to me the household survey would be it, at least to the extent that the figures are explained by the fact that people have more than one job.

Mrs. **Norwood**. The household survey clearly is the only place we get our unemployment figures.

Senator **Proxmire**. That's right. You get no unemployment figures at all from the business survey.

Mrs. **Norwood**. That's right. It is possible that we are—and I believe we are—underestimating employment in the household survey. That would not affect the unemployment rate.

Senator **Proxmire**. Let me ask one more question.

During the past year the civilian unemployment rate has declined from 6 percent to 5.4 percent; the number of unemployed has declined 600,000; but the number of people working part time for economic reasons has not gone down. In fact, the number of people working part time for economic reasons has risen more than 500,000 in the last 2 months.

Why are people having trouble finding full-time jobs in a period of strong job growth? Is it a matter of education, training and skills?

Mrs. **Norwood**. Yes. I think it is a mismatch both geographically and in terms of skill. The tight labor market does not exist all over the country. It is certainly prevalent in some areas and some industries.

Senator **Proxmire**. Thank you, Mrs. Norwood. Once again, congratulations on your eminent rank.

Mrs. **Norwood**. Thank you very much.

Senator **Sarbanes**. Commissioner, I have a couple of followup questions.

I think the point has been made that the hourly earnings index is not comprehensive in terms of covering all elements of compensation. I want to expand on that point and talk about real compensation per hour as reflected on our annual report.

We have a figure that shows the index of real total compensation paid to labor for each hour of work. This is in the JEC's annual report. This index includes both cash wages and fringe benefits. It shows that the rate of return for an hour's work in the economy remained essentially flat throughout the 1980's

First of all, if you are trying to get some perception of what is happening to the return to workers for each hour of work, is that a good index to use since it encompasses both wages and fringes?

Mrs. **Norwood**. I am not familiar with the construction of that particular index, but I can tell you that it is quite clear that the level of any measure of compensation in real terms now is considerably below the levels of the 1970's. Almost every index has come up some during the 1980's, but they are still way below the levels of the 1970's.

I can't comment on that particular index. We will be glad to look at it if you like and submit something for the record.

Senator **Sarbanes**. In other words, the return to a worker for each hour of work in real terms is less now than it was a few years ago.

Mrs. **Norwood**. Yes.

Senator **Sarbanes**. Which I guess would give some of the explanation for this apparent sense that exists in the country on the part of workers that the situation is not getting any better, because in fact it is not getting any better.

Mrs. **Norwood**. For some of them. That's correct.

Our work has shown that the disparity between the bottom and the top is getting larger. Although, if you divide it into different groups and you look at various approaches to income in general, we do find that there has been an increase in the upper group.

The difference between the bottom and the top is larger, and that is a matter of some concern, particularly when you combine that with our projections which suggest that the kinds of jobs that are going to be growing fastest are the jobs which require more training and education, more sophistication. The people at the bottom who are already pretty far from the top, if we don't do something about it the gap is likely to become greater.

Senator **Sarbanes**. The proportions of that must be predominantly at the lower end than at the upper end. Otherwise the real compensation per hour would go up, would it not?

Mrs. **Norwood**. It depends on the years that you pick.

Senator **Sarbanes**. This is a trend line, real compensation per hour index. This is 1947 and it moves right on up until it hits the 1970's, and then it begins to go flat. That is accurate in terms of what has been happening, isn't it?

Mrs. **Norwood**. Until it hits the 1980's. Yes.

Senator **Sarbanes**. Here we have it a bit in the 1970's and then into the 1980's.

Mr. Plewes, did you want to add to that?

Mr. **Plewes**. In the 1970's it was because of inflation and now it is because wages aren't keeping up.

Senator **Sarbanes**. Apparently compensation per capita is rising although compensation per worker is not rising. Is that correct?

Mrs. **Norwood**. Per capita income is generally much higher than some of the other measures. Yes.

Senator **Sarbanes**. We are back to the two-earner family, aren't we?

Mrs. **Norwood**. Yes.

Senator **Sarbanes**. Aren't we in a situation where really any measure that shows that income for Americans is rising is attributable to additional workers in the work force and not to additional compensation per worker?

In other words, if you use the latter measure, it is not rising; it is really flat or maybe even declining. The only way you will get a boost and are able to show a boost in any figures is to somehow be using some index in which additional people are moving into the work force. You can show compensation per capita going up because more people are in or you can show family income going up because you have a two-earner family rather than a one-earner family, but if you hold the measure to a worker and the return to that worker, that is not rising. Isn't that correct?

Mrs. **Norwood**. Our employment cost index including both wages and benefits has shown in real terms five-tenths of 1 percent increase over the past year.

Senator **Sarbanes**. We also have a chart that shows productivity and compensation in the private sector. Nineteen forty-seven is here and 1987 here. The two lines that are tracking one another here are real output per hour and real compensation per hour, which essentially ran parallel until recent years when we developed a separation between real output per hour and compensation per hour with real compensation per hour lagging behind, which would suggest that workers are not, at least compared with the past, receiving the full measure of their improved productivity performance.

Is that correct?

Mrs. **Norwood**. It would suggest that, yes, and given the steep recession that we had in 1981–82 I would expect that to be true.

Senator **Sarbanes**. We have had other recessions over this period. None as steep as the one in 1981–82, but the lines never separated in any comparable extent to what they have now. The fact is that workers have been producing but they are not getting a commensurate return.

Mr. **Mark**. I haven't seen the chart, but the data that we have show some variation of the opposite effect earlier. If I remember correctly, from 1950 to about 1965 or so this real hourly compensation rate was somewhat higher than the growth rate in the productivity, and then since 1980 the reverse has taken place.

Senator **Sarbanes**. Take a look at figure 67, page 75. The lines are not exactly identical. The point you make, I take it, is reflected in that separation about 1950. Is that the point?

Mr. Mark. That's right.

Senator Sarbanes. But we have had nothing comparable to the departure that has taken place in recent years, and this departure, if I understand this correctly, shows that workers while their output per hour has improved their compensation is falling well short of that, certainly compared with the historical experience. Is that correct?

Mr. Mark. That is correct. There has been a shift in the shares somewhat because of that, from labor to nonlabor shares.

Senator Sarbanes. In effect, what that means is there has been a shift away from a labor income, doesn't it?

Mrs. Norwood. Yes. That is what he was saying. That is why our unit labor costs are low now.

Senator Sarbanes. Which then improves our international competitiveness.

Mrs. Norwood. Yes.

Senator Sarbanes. So if we go to coolie wages we can really compete, to take it to its logical extreme. Is that correct?

Mrs. Norwood. Unless you shift the shares.

Senator Sarbanes. I think this is a subject we may want to pursue with you further on subsequent occasions.

We thank you very much for your testimony this morning.

Mrs. Norwood. Thank you.

Senator Sarbanes. The committee is adjourned.

[Whereupon, at 11:10 a.m., the committee adjourned, subject to the call of the Chair.]

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